DAMES & MOORE A PROFESSIONAL LIMITED PARTNERSHIP
911 WILSHIRE BOULEVARD, SUITE 700, LOS ANGELES, CALIFORNIA 90017
(213) 683-1560 TELEX: 315528 TWX: 910-321-4299 FAX NO. (213) 628-0015

May 10,1991

Catellus Development Corporation
201 Mission Street, 30th Floor
San Francisco, California 94105

Attention: Mr. Ric Notini

Final Report
Phase II Environmental Assessment
La Salle Parcel
12310 Slauson Avenue
Santa Fe Springs, California
For: Catellus Development Corporation

THIS PAGE

Dear Ric:

Enclosed herewith are four copies of the subject report. The report presents our findings and conclusions regarding the potential for soil and ground-water contamination based on past and present land use at the La Salle Parcel. It is our opinion that the La Salle Parcel is not a source of the groundwater contamination in the nearby vicinity; other sources have been identified which are likely responsible in part for detectable levels of contamination found in the upper most aquifer beneath the site.

Please contact the undersigned if you have any questions or would like additional information.

Sincerely,

DAMES & MOORE

James E. McNally
Associate

Richard Stout

Richard Stout
Registered Geologist
Project Manager

cc: Kirk Kniss, Prudential Mortgage Capital Company, Inc.
Harris Sanders, Prudential Realty Group

FINAL REPORT
PHASE II ENVIRONMENTAL ASSESSMENT
LA SALLE PARCEL
12310 SLAUSON AVENUE
SANTA FE SPRINGS, CALIFORNIA
FOR: CATELLUS DEVELOPMENT CORPORATION

1.0 INTRODUCTION

Dames & Moore is pleased to present this Phase II Environmental Assessment Report on behalf of Catellus Development Corporation (Catellus). This report describes the soil and ground-water investigation performed at the property at 12310 Slauson Avenue in Santa Fe Springs, California ("La Salle Parcel") An adjacent property, also owned by Catellus, at 12140 Slauson Avenue ("Central Parcel") is the subject of a separate report. The La Salle Parcel occupies approximately 10 acres and has been recently developed with a 200,000 square foot one-story warehouse structure (Figures 1 and 2). The La Salle Parcel is currently bordered to the north and northeast, across Slauson Avenue, by light industrial and commercial buildings, to the east by a warehouse structure and fueling facility (Lincoln Industrial Center), to the south by a concrete-covered flood control drainage channel, and to the northwest by the Central Parcel.

Prior to the implementation of the Phase II Environmental Assessment, Dames & Moore reviewed documents provided by Catellus regarding previous environmental investigations of the La Salle Parcel, as well as neighboring properties that may have negatively impacted the La Salle Parcel. In addition, appropriate regulatory agencies and institutions were visited in order to review pertinent information concerning land use history and known and potential sources of contamination in the area. This information was used to determine the scope of the Phase II Environmental Assessment. The agencies and institutions visited consisted of:

- California Regional Water Control Board, Los Angeles Region;
- City of Santa Fe Springs Department of Building and Safety;
- City of Santa Fe Springs Fire Department, Environmental Protection Section;
- Los Angeles County Department of Public Works, Hazardous Materials Section;
- University of California at Los Angeles, Spence Aerial Photograph Collection;
- Whittier College, Fairchild Aerial Photograph Collection;
- Los Angeles County Department of Health Services; and
- California Division of Oil and Gas.

The recent soil and ground-water investigation described herein was conducted in accordance with our Phase II Environmental Assessment Workplan dated March 22, 1991. The workplan was based on guidelines presented in the Prudential Realty Group's "Environmental Site Assessment scope of work for Phase II Subsurface Investigation."

2.0 BACKGROUND

2.1 SUMMARY OF HISTORICAL AND CURRENT LAND USE

2.1.1 Historical Land Use

This discussion of historical land use for the La Salle Parcel was developed based upon information presented in previous environmental investigation reports, discussions with Catellus representatives, agency file information, and review of historical aerial photographs and maps.

Copies of historical aerial photographs from 1928 through 1969 are presented in Appendix A. Aerial photographs taken in 1928 through the early 1960's indicate the site was used for agriculture or was undeveloped. An above-ground bulk fuel storage facility was observed approximately 2,000 feet northeast of the La Salle Parcel. Based on information

inferred from aerial photographs such as circular foundation impressions on the ground surface and remnants of the surrounding berm areas associated with each former tank, as many as ten relatively large above-ground fuel storage tanks appear to have been located on the adjacent property. An aerial photograph taken in 1963 revealed that the La Salle Parcel was recently graded and covered with asphalt. No significant changes were observed on a 1966 photograph. According to information provided by Catellus, the La Salle Parcel was occupied by General Motors Corporation from approximately 1960 to 1965. During that period, the 10-acre site was part of a 40-acre property. From approximately 1965 to 1988, Chrysler Corporation occupied the property and used the facility for new car preparation.

A 1969 aerial photograph confirmed that the La Salle Parcel was being used for automobile storage, but no structures were observed on the La Salle Parcel. According to Catellus representatives, two main buildings (Buildings 1 and 2) occupied the southern portion of the La Salle Parcel from the early 1970's to 1988 (Figures 3 and 4). Building 1 contained the Emission Control Testing System (referred to as the Cold Start Area) and included three hydraulic service hoists and two concrete-lined service pits located in the eastern and western portion of the building, respectively. In addition, a 1,000-gallon underground concrete clarifier was located outside the building, adjacent to the north corner.

Building 2 was also used as part of the Emission Control Testing System (Hot Start Area) and included a hydraulic hoist in the northern portion of the building, two 6,000-gallon gasoline underground storage tanks (USTs) and a 500-gallon underground concrete clarifier located within an outdoor area adjacent to the west wall of the building.

According to information reviewed at the City of Santa Fe Springs, Department of Building and Safety, Building 1 was constructed in approximately 1971 and used as part of the emission testing facility. In 1973, Building 2 was constructed and in 1978 an extension

added to the north side of building. Multiple permits indicated that the buildings were demolished in 1988.

In 1988, Chrysler discontinued operations at the facility and removed the USTs and clarifiers per the request of Catellus. Prior to the facilities being demolished, an aerial photograph was taken that shows the former locations of Buildings 1 and 2. A surveying company was employed to project the locations of the USTs and clarifiers onto the 1988 photograph. This photograph confirms earlier reports regarding the UST and clarifier locations.

2.1.2 Current Land Use

As mentioned earlier, the La Salle Parcel is occupied by a 200,000 square foot one-story warehouse. The structure is currently leased by the La Salle Company and is being used as a paper distribution facility. Paper products are stored along steel racks located throughout the warehouse. The paper is loaded onto trucks via forklifts through multiple above-grade loading docks located along the western side of the warehouse.

According to available information, there are no USTs, underground clarifiers or sumps presently located on the La Salle Parcel. An above-ground storage tank containing propane is situated on a concrete pad located on the west-central portion of the asphalt-covered parking area. The propane is used to fuel forklifts associated with the paper facility. We observed. No evidence of leakage from the tank or staining on the underlying concrete-covered ground surface was observed during a site visit conducted by Dames & Moore. An emergency generator is located in a concrete tilt-up building located on the west-central portion of the asphalt-covered parking area. No evidence of leakage from the above-ground fuel tank associated with the generator was observed.

2.2 SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2.2.1 Soil Investigations

August 1963: Geotechnical Report by Western Laboratories

A report entitled "Excavation and Compacted Fill Report" prepared by Western Laboratories and dated August, 1963 indicated the La Salle Parcel was previously undeveloped and covered with native vegetation. In 1963, the vegetation was removed and the La Salle Parcel was graded in preparation for an asphalt-covered parking area. During the grading process, approximately 4 to 6 inches of fill material was compacted throughout the La Salle Parcel.

March, 1988: Tank Removal Geologic Report by Petroleum Industries Consultants, Inc.

On March 18, 1988, two 6,000-gallon USTs, a service pump island, one 500-gallon clarifier and one 1,000-gallon clarifier were removed within the immediate vicinity of Buildings 1 and 2. During the removal process, field personnel reported no visual evidence of leakage. Two soil samples were collected at two feet below the base of each of the two UST excavations. Total Petroleum Hydrocarbons (TPH) analyzed by EPA Method 8015 (modified) were not detected in the soil samples (detection limit = 1.0 mg/kg). One soil samples was collected at 2 feet below the service pump island and analyzed for TPH by EPA Method 8015 (modified). Analytical results revealed trace levels of 5.0 mg/kg of TPH present. In addition, one soil sample was collected at two feet below the base of each clarifier excavation and analyzed for TPH. Analytical results revealed concentrations of 19.0 mg/kg and 2.5 mg/kg TPH in the samples associated with the 1,000-gallon and 500-gallon clarifiers, respectively.

May, 1988: Results of Limited Field Investigation by McLaren Environmental Engineering

Several hand auger borings were advanced on the property located directly west of the site to evaluate the potential for soil contamination. Analytical results revealed non-detectable levels of TPH, low levels of metals and 30.0 μg/kg of trichloroethene (TCE). The samples that yielded trace levels of TCE were collected at 1.0 foot below ground surface (bgs) in a service area located approximately 450 feet west of the site. No samples were collected on the La Salle Parcel.

A plot plan presented in the McLaren report confirms the location of the USTs and underground clarifiers near Buildings 1 and 2 on the La Salle Parcel.

June, 1989: Preliminary Geotechnical Investigation by Converse Consultants

As part of the construction of the La Salle building, Converse Consultants completed a preliminary geotechnical investigation at the La Salle Parcel. The investigation consisted of advancing four geotechnical soil borings (Borings BH-17, BH-18, BH-19, and BH-20) to a depth of approximately 30 feet bgs. Borings BH-18, BH-19 and BH-20 were completed on the northern portion of the site. Boring BH-17 was advanced on the southern portion. All soil samples were screened in the field with an organic vapor analyzer (OVA). Organic vapors were not detected by the OVA. No other field evidence that would indicate soil contamination (such as soil staining or hydrocarbon odors) was noted on the boring logs. Two soil samples were collected at 5 feet and 11 feet bgs from Boring BH-17 and analyzed for TPH by EPA Method 8015 (modified). Analytical results revealed non-detectable levels of TPH at a detection limit of 5.0 mg/kg.

The upper 10 feet of sediments were found to consist of dense, moist silt to clay. At approximately 15 feet bgs, the material grades from silt to fine sand. Ground water was not encountered during the investigation.

December, 1990: Preliminary Soil and Ground-water Investigation by Converse Consultants

Converse Consultants performed a soil and ground-water investigation primarily on the Central Parcel. As part of this investigation, a ground-water monitoring well (GW-6) was installed on the northern portion of the La Salle Parcel (Figure 5). Information regarding ground-water analyses is discussed in Section 6.3.

January, 1991: Phase I Environmental Site Assessment by Converse Consultants

Converse Consultants reported that several soil borings had been previously installed on the site within the vicinity of the USTs and clarifiers located on the southern portion of the site. Converse Consultants concluded that TPH analytical data indicated no petroleum hydrocarbon contamination. Soil samples collected from the adjacent Central Parcel to the west and analyzed for chlorinated hydrocarbons indicated the potential for ground-water degradation in the site vicinity. In addition, leaking USTs had been reported at the Lincoln Industrial Center bordering the La Salle Parcel to the east.

March, 1991: Soil and Ground-water Investigation by Converse Consultants

Recent analytical data provided by Converse Consultants indicates that significant concentrations of TPH and chlorinated solvents were detected in soils underlying a former clarifier located within the Central Parcel and approximately 450 feet northwest of the La Salle Parcel. TPH concentrations ranged up to 13,000 mg/kg for a sample collected at 22 feet bgs beneath the former clarifier. Trichloroethene (TCE), tetrachloroethene (PCE) and 1,1-dichlorothene (DCE) ranged up to 340 μg/kg, 3,800 μg/kg and 1,200 μg/kg, respectively. As a result of elevated readings, Converse Consultants excavated approximately 1,000 cubic yards of soils associated with the former clarifier. During the excavation process, visual evidence of soil staining was observed by field personnel and later confirmed by analytical testing down to a depth of approximately 33 feet bgs.

Analytical results indicated that concentrations of TPH and total halogenated compounds are lower on the La Salle Parcel than the Central Parcel. The nearest soil samples analyzed for contaminants were associated with a geotechnical soil boring that was advanced to approximately 30 feet bgs adjacent to the southwest corner of the La Salle Parcel. Soil samples were collected between 5 feet and 30 feet bgs and analyzed for aromatic and halogenated volatile compounds by EPA Methods 8020 and 8010, respectively. Analytical results revealed the presence of trace levels of PCE, TCE and 1,1,1-trichloroethane (TCA) at depths ranging from 15 feet to 25 feet bgs.

2.2.2 Ground-water Investigations

December, 1990: Preliminary Soil and Ground-water Investigation by Converse Consultants

In November and December 1990, following the detection of chemicals in the soils beneath a former clarifier located on the Central Parcel to the west, a ground-water investigation was initiated by Converse Consultants. Seven ground-water monitoring wells (GW-1 through GW-7) were installed during the investigation (Figure 5).

Ground water was encountered at approximately 33 feet bgs with the exception of well GW-1, located on the southern portion of the adjacent Central Parcel where ground water was located at approximately 37 feet bgs. Ground-water elevation measurements indicated a ground-water gradient of 0.002 feet per foot to the south-southwest.

Ground-water samples were collected from all seven wells and analyzed for halogenated hydrocarbons by EPA Method 601. The results indicated the presence of the following halogenated compounds:

- DCE ranging from 4.2 to 1,400 micrograms per liter (μg/l);
- PCE ranging from 2.1 to 520 μg/l;
- TCE ranging from 63.2 to 500 μg/l;

- 1,1,1-TCA ranging from less than 0.5 μg/l (non-detectable) to 14 μg/l; and
- Trichlorofluoromethane ranging from non-detectable to 310 μg/l.

In nearly all cases, the highest concentrations of halogenated compounds were found on the Central Parcel, which is both upgradient and cross-gradient of the La Salle Parcel. Lowest concentrations (or non-detectable results) were observed in well GW-6 located on the northern portion of the La Salle Parcel, with the exception of chloroform which was detected at 1.4 μg/l (Figure 5). Chloroform was not detected in the other remaining wells.

Ground-water samples from selected monitoring wells were also analyzed for aromatic hydrocarbons by EPA Method 602. The results indicated benzene in a well upgradient from the clarifier at 10 μg/l. Aromatic hydrocarbons were not detected in the remaining wells.

March, 1991: Additional Soil and Ground-water Investigation by Converse Consultants

Converse Consultants recently installed four additional ground-water monitoring wells (GW-8 through GW-11) on the western portion of the adjacent parcel (Figure 5). Details regarding well construction and data on ground-water gradients indicate that the wells were installed to a maximum depth of approximately 50 feet bgs. Ground water was encountered at approximately 33 feet bgs. The ground-water gradient was reported to be to the south-southwest.

Ground-water samples collected from all eleven wells were analyzed for halogenated and aromatic hydrocarbons by EPA Methods 601 and 602, respectively. The results, which are shown on Figure 5, indicated the following:

- DCE ranging from 7.8 to 980 μg/l;
- 1,2-DCA ranging from non-detectable to 3.3 μg/l;
- PCE ranging from 3.3 to 450 μg/l;

- TCE ranging from 4.0 to 420 μg/l;
- 1,1,1-TCA ranging from non-detectable to 12 μg/l;
- Chloroform ranging from non-detectable to 10 μg/l;
- Trichlorofluoromethane ranging from non-detectable to 370 μg/l;
- Benzene ranging from non-detectable to 370 μg/l;
- Toluene ranging from non-detectable to 2.0 μg/l;
- Ethylbenzene ranging from non-detectable to 6.0 μg/l; and
- Xylenes ranging from non-detectable 16 μg/l.

In nearly all cases, the highest concentrations were found in monitoring wells located on the Central Parcel, which is both upgradient and cross-gradient of the La Salle Parcel. The exception was 1,2-DCA, which was detected in low concentrations in two wells located approximately 600 and 1200 feet northwest of the La Salle parcel, respectively. The lowest concentrations (or non-detectable results) were found in well GW-6.

3.0 PURPOSE AND SCOPE

The purpose of the Phase II Environmental Assessment was to: (1) evaluate potential soil and ground-water contamination associated with possible historic sources such as USTs, clarifiers, service pits and hydraulic hoists previously located on the southern portion of the La Salle Parcel; (2) if encountered, estimate the volume of contaminated soil; and (3) evaluate the potential for degradation of ground water beneath the site resulting from off-site sources.

To accomplish these objectives, Dames & Moore advanced three vertical exploratory soil borings, and four angle exploratory borings, and installed, developed and sampled six ground-water monitoring wells. In addition, a pre-existing monitoring well (GW-6) located on the northern portion of the La Salle Parcel was sampled. As a result of the current land use and inaccessibility to areas within the building, no exploratory borings were advanced within the interior of the existing building.

3.1 ADDITIONAL SOIL CHARACTERIZATION

Dames & Moore selected the soil boring locations shown on Figure 6 based upon information provided by Catellus and other pertinent information that was reviewed prior to implementation of the Phase II investigation. Borings B-1, B-2, and B-3 were advanced to ground water (approximately 35 feet bgs) within the vicinity of the former hydraulic hoist areas associated with Building 1. These areas are currently located within an asphalt-covered parking area on the southeast portion of the La Salle Parcel.

The previous locations of two USTs and one underground clarifier associated with Building 2 and one concrete-lined service pit associated with Building 1 are partially covered by the existing building. Therefore, four angle borings (A-1 through A-4) were drilled to evaluate the underlying soils (Figure 6). Angle borings A-1 and A-2 were drilled to ground water (approximately 35 feet bgs) and were located near two former USTs. Angle Borings A-3 and A-4 were drilled to ground water in the vicinity of a former 500-gallon underground clarifier and a former concrete-lined service pit, respectively.

3.2 ADDITIONAL GROUND-WATER CHARACTERIZATION

Previous ground-water investigations conducted to the north and northwest of the site indicated a south-southeast ground-water flow direction in the uppermost saturated zone. The investigations also indicated that ground water was first encountered at approximately 35 feet bgs. Based on this information, six ground-water monitoring wells (MW-1 through MW-6) were installed to a depth of approximately 50 feet bgs at the locations shown on Figure 5. Wells MW-1 and MW-2 were installed in the anticipated upgradient direction of potential on-site sources of ground-water contamination and in the anticipated downgradient direction of off-site sources of ground-water contamination. The results of this investigation indicate that the ground water gradient under the La Salle Parcel is currently to the south-southwest. Consequently, well MW-6 was installed downgradient of off-site UST sources located east of the site (within the Lincoln Industrial Center property). The three remaining

wells (MW-3, MW-4 and MW-5) were installed downgradient from the former UST, clarifier, service pit, and hydraulic hoist areas located on the subject site. The six wells were designed to characterize the ground-water conditions of the shallow ground-water zone beneath the La Salle Parcel. In addition, a pre-existing monitoring well GW-6 was sampled to provide upgradient information.

4.0 INVESTIGATIVE PROCEDURES

4.1 FIELD PROCEDURES

In conducting the field activities described herein Dames & Moore utilized procedures consistent with internal QA/QC policies as well as Los Angeles Regional Water Quality Control Board (RWQCB) guidelines. All work was conducted under the technical supervision of a California Registered Geologist. Procedural details regarding exploratory drilling, soil sampling, installation and development of ground-water monitoring wells and ground-water sampling are presented in Appendix B.

4.2 HEALTH AND SAFETY PLAN

In accordance with OSHA regulations, a site-specific Health & Safety Plan was developed for the subsurface investigations completed at the La Salle Parcel. All field personnel were required to implement the procedures presented in this document while conducting on-site field work.

4.3 LOCATION OF PROPOSED BORINGS AND SUBSURFACE OBSTRUCTIONS

In order to properly locate the proposed soil boring and monitoring well locations with respect to the previous locations of the UST, clarifier, service pit and hydraulic hoist areas, a licensed surveyor marked the proposed boring locations in the field.

Prior to conducting the drilling, Underground Service Alert was contacted to assess the location of underground utilities. In addition, the licensed surveyor and Dames & Moore personnel evaluated existing building plans regarding public utilities and other pertinent underground obstructions to determine final boring locations.

4.4 ANALYTICAL PROGRAM

4.4.1 Soil Analyses

During the completion of each exploratory soil boring and installation of ground-water monitoring wells, relatively undisturbed soil samples were collected at approximately 5-foot sample intervals. Soil samples were selected for analysis based on field observations, historical land use information, and to provide maximum vertical and/or lateral coverage. Selected soil samples were analyzed for various contaminants assumed to be associated with the features under investigation (i.e., soil samples collected in the vicinity of a former UST were analyzed for the types of compounds associated with the former contents of the tank).

Borings B-1, B-2 and B-3 were located in the former hydraulic hoist areas (Figure 6). The samples collected at 10, 15 and 25 feet were analyzed for TPH by EPA Method 418.1.

Three soil samples from angle boring A-1 and four soil samples from angle boring A-2, drilled in the vicinity of the former USTs, were analyzed for TPH (as gasoline), aromatic compounds (Benzene, Toluene, Xylene and Ethylbenzene (BTXE)) and total lead by EPA Methods 8015 (modified), 8020 and 7421, respectively.

Angle borings A-3 and A-4 were located adjacent to a former underground clarifier and service pit, respectively (Figure 6). Three selected soil samples from each boring were analyzed for volatile organic compounds (VOCs), pH, and TPH (as gasoline) by EPA Methods 8240, 9040 and 8015 (modified), respectively. In addition, one soil sample from

each boring was analyzed for semi-volatile organic compounds (SVOCs) by EPA Method 8270 and Title 22 total metals by Inductively Coupled Plasma/Mass Spectrophotometry (ICP/MS).

4.4.2 Ground-water Analyses

Ground-water samples collected from monitoring wells MW-1 through MW-6 and GW-6 were analyzed for VOCs, SVOCs, TPH (as gasoline and diesel), pH, chromium and total lead by EPA Methods 624, 625, 8015 (modified), 150.1, 6010 and 7421, respectively.

4.4.3 Laboratory Procedures

Laboratory chemical analyses of all soil and ground-water samples were conducted by Acculab Environmental Services of Petaluma, California. Acculab is a California Department of Health Services certified laboratory for the analyses that were performed. With each analytical report, the laboratory submitted results of various laboratory QA/QC analyses such as surrogate recoveries and various practical quantitative limits. QA/QC procedures followed RWQCB guidelines and included collection and analysis of duplicate ground-water samples, travel blanks, and field blanks.

5.0 GEOLOGIC AND HYDROLOGIC CONDITIONS

5.1 REGIONAL CONDITIONS

5.1.1 Geology

The site is located approximately 1.75 miles east of the San Gabriel River and southwest of the Puente Hills on the eastern portion of the Los Angeles Coastal Plain (CDWR, 1961). This portion of the coastal plain, referred to as the Santa Fe Springs Plain, is a low, slightly rolling, topographic feature that slopes to the northeast and southwest. The present topography is a result of uplift of coalescing alluvial deposits from the Rio Hondo, Los Angeles, and San Gabriel Rivers. Uplift of the Santa Fe Springs Plain has probably been caused by the Santa Fe Springs-Coyote Hills anticline. This anticline grades gradually into the plain to the northwest. The water-bearing Lakewood and San Pedro Formations (described below) are folded over the structure. The Santa Fe Springs Plain is bordered by the Downey Plain to the south and west, the Puente and Coyote Hills to the east, and the Puente Hills to the north.

Sediments of Quaternary age comprise the formations in the site vicinity. The Quaternary deposits are divided into Recent and Pleistocene series (Figure 7). The Recent series consists of alluvial materials, primarily stream deposited gravel, sand, silt, and clay known as Recent alluvium. Underlying the Recent alluvium, the water-bearing Pleistocene series is divided into upper Pleistocene and lower Pleistocene. The upper Pleistocene is represented by the Lakewood Formation and the lower Pleistocene by the San Pedro Formation. Within the site vicinity, the Lakewood Formation includes the Gage aquifer, the basal member of the formation. The Gage aquifer generally consists of sand with variable amounts of gravel. The most important aquifers used for ground-water production are contained within the San Pedro Formation. The lower Pleistocene San Pedro Formation is represented by a series of stratigraphic members or aquifers named in downward succession include the Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers.

Only those members capable of storing or conveying ground water in quantity have been named as aquifers. The members of the San Pedro Formation are generally separated from each other by unnamed fine-grained members or aquitards (Figures 7,8,9).

Basement materials in the Los Angeles basin predominantly consist of metamorphic rocks of Mesozoic age (Yeats, 1972). Data indicate that the basement surface lies at depths in excess of 30,000 feet in the central portion of the basin in the Downey-Lynwood area and rises abruptly away from this central depression to a depth of approximately 23,000 feet near the site vicinity. A thick sequence of sedimentary strata interbedded with minor volcanic rocks unconformably overlies the metamorphic basement. The bulk of this basin fill sequence is Middle Miocene in age and younger.

5.1.2 Hydrogeology

5.1.2.1 Introduction

The following discussion is based primarily upon information presented in Bulletin No. 104, Planned Utilization of the Ground-water Basins of the Coastal Plain of Los Angeles County (CDWR Bulletin 104). The site is located within the eastern portion of the Montebello Forebay area of the Central Ground-water Basin. The Central Basin is bounded on the west and southwest by the West Coast Basin, on the north by the Elysian, Repetto, and Puente Hills, and somewhat arbitrarily east and southeast by the Los Angeles-Orange County boundary line. The Central Basin underlies an approximately 277-square mile area of the Los Angeles coastal plain.

The Central Basin is divided into a northern non-pressure or forebay area, and a southern pressure area. The forebay area is generally characterized by high potential for infiltration of surface water to underlying unconfined aquifers. In the pressure area, percolation of surface waters is somewhat restricted by relatively impervious layers (aquitards) of considerable lateral extent. Investigations conducted during the 1950's and early 1960's found that aquitards extend into the so-called "forebay areas" and pressure area

aquitards were found to contain large amounts of relatively pervious sandy and gravelly clay and silt in certain areas.

5.1.2.2 Major Aquifers

The stratigraphic units discussed below are the major fresh ground-water bearing units that are present in the eastern portion of the Montebello Forebay area. In the site vicinity, the base of fresh ground water coincides approximately with the base of the San Pedro Formation, consequently this discussion is limited to the strata of the Lakewood Formation and underlying San Pedro Formation. Figures 8 and 9 show a generalized cross-section of the major aquifers in the area. Fine grained sediments generally exist between the major aquifers in the Central Basin. These fine-grained zones, which restrict flow between the aquifers, are not named. The major aquifers are discussed below from shallowest to deepest by formation.

Lakewood Formation

Jointly, the Gage and Gardena aquifers constitute the basal water-bearing units of the Lakewood Formation. The Gardena is contemporaneous and continuous with the Gage, occurring at the same stratigraphic horizon. The Gage aquifer which is comprised mainly of sand, ranges in thickness from 20 to 80 feet and extends over approximately one third of the Montebello forebay area. The Gardena aquifer is present over about two thirds of the Montebello forebay area and consists of coarse sand and gravel characteristic of stream channels. This aquifer was deposited in channels incised into the Gage aquifer and ranges from 20 to 140 feet in thickness. The Gage is present in the site vicinity where it is approximately 50 feet thick and is overlain by Recent alluvium. Because of its proximity to ground surface and general poor water quality, the Gage aquifer is not used for beneficial purposes in the Santa Fe Springs area.

San Pedro Formation

Within the site vicinity, five major aquifer systems are found in the San Pedro Formation: (1) Hollydale aquifer; (2) Jefferson aquifer; (3) Lynwood aquifer; (4) Silverado aquifer; and (5) Sunnyside aquifer (Figures 7,8,9).

The Hollydale aquifer constitutes the uppermost water-bearing unit in the San Pedro Formation. The Hollydale aquifer is lithologically variable and discontinuous. It generally consists of sand and silty sand with interbedded clay and gravel and is approximately 40 feet thick in the site vicinity. The meandering course of the Hollydale aquifer suggests stream deposition, but the lithology throughout most of the aquifer suggests shallow marine deposition. Within the site vicinity, streams flowing through the Whittier Narrows controlled deposition of the Hollydale aquifer. In stratigraphic position, the Hollydale aquifer is the first important aquifer beneath the Gage aquifer, but is not an important producing zone because of its low yield.

The Jefferson aquifer is also discontinuous in the site vicinity and is separated from the overlying aquifer by undifferentiated fine-grained sediments. This aquifer mainly consists of fine-grained sand and sandy clay with some isolated coarse gravel and sand lenses. The Jefferson aquifer is approximately 40 feet thick in the site vicinity. The Jefferson aquifer exists in sinuous courses assumed to have been laid down by the Los Angeles and San Gabriel Rivers. Although it is not considered to be an important water producing aquifer, the Jefferson aquifer is perforated for drinking water supply wells in coarse sand and gravel zones. This aquifer also merges with the overlying aquifers in the Whittier Narrows.

The Lynwood aquifer is found throughout the Montebello Forebay area. It is comprised mainly of coarse sand and gravel and is approximately 100 feet thick in the site vicinity. The Rio Hondo and San Gabriel River systems are thought to have been the major sources for the continental sediments that comprise the Lynwood aquifer. This aquifer is

an important source of ground water and most wells in the basin draw from it. Surface and subsurface flow through the Whittier Narrows moves downward through the overlying aquifers into the Lynwood aquifer. Water is also artificially spread in recharge basins south of the Whittier Narrows where the Lynwood aquifer is in contact with the permeable sediments above, thus permitting this water to reach the Lynwood.

The Silverado aquifer constitutes all water bearing materials below the Lynwood aquifer and above the underlying Sunnyside aquifer. The Silverado aquifer consists of two sequences including a fine-grained marine sequence of interbedded sand, gravel, silt, and clay which overlies continental deposits of coarse to fine-grained sand and gravel interbedded with silt and clay. In the site vicinity the Silverado aquifer is approximately 250 feet thick. Continental deposits were laid by the ancestral Rio Hondo and San Gabriel River systems as the sea was retreating from the coastal plain. North of the site in the Whittier Narrows where recharge from shallow depths can affect it, the Silverado aquifer merges with the overlying aquifers. This aquifer is one of the most important sources of ground-water in the basin.

The Sunnyside aquifer is the basal member of the San Pedro Formation and is the deepest aquifer identified in the Montebello Forebay area. It is generally composed of sand with lenses of coarse gravel. In the site vicinity, the Sunnyside aquifer may be up to 350 feet thick. This aquifer is thought to be of marine origin due to the marine shells found in the sediments and interbedded marine-type clays and shales. Although supply wells are perforated in the Sunnyside aquifer, it does not produce as much water as the overlying Silverado aquifer.

5.1.2.3 Regional Ground-water Quality

With the discovery of contaminated drinking water wells in the San Gabriel Valley, a state-mandated program (AB 1803) for testing of large public drinking water supply wells was instituted. Although the subject site is not located in the San Gabriel Valley, it is

located downgradient of the Whittier Narrows, a portion of the Los Angeles Basin which acts as a conduit for ground-water migration from the San Gabriel Valley to the Montebello Forebay area. As a result of the AB 1803 study, many public drinking water supply wells located in Santa Fe Springs and the nearby cities of Norwalk, Downey, Pico Rivera, and Whittier were found to contain VOCs, including PCE and TCE. The cities of Whittier, Santa Fe Springs, and Pico Rivera maintain supply wells located upgradient or cross-gradient to the La Salle site. In addition to the AB1803 program, the Central and West Basin Water Replenishment District conducts regular monitoring for VOC contamination in the Montebello Forebay area.

Information from the AB 1803 Ground-water Monitoring Results Report dated April, 1986 and the Annual Reports on Results of Water Quality Monitoring, Water Years 1987-1988 and 1988-89 were reviewed. From these reports, Figure 10 was developed. The figure shows the wells monitored under the above-referenced programs that have been found to contain chlorinated solvent contamination. Both reports concluded that there is a regional problem with VOC contaminants in shallow and deep ground-water aquifers, and that TCE and PCE are present in ground-water throughout the Montebello Forebay area. As shown on Figure 10 several contaminated wells are located upgradient of the site. TCE and PCE are most prevalent; however, other chemicals are also found in the ground water. Analytical results reveal that TCE concentrations have ranged from 1.3 μg/l to 1.6 μg/l in two wells located less than a 1/4-mile north-northwest of the site (Wells SFS 1 and 3OR3; Figure 10). Data from a well located approximately 1.5 miles north of the subject site indicated that several VOCs including TCE and PCE were found in the ground water (Well 1621-T).

In addition to the above-referenced reports, several other sources of information were reviewed to identify known and potential sources of ground-water contamination within the site vicinity. These information sources included: the Regional Water Quality Control Board (RWQCB) Underground Storage Tank Leak List (LUST); review of files maintained at the Los Angeles County Department of Public Works Waste Management Division (DPW) regarding sites on the LUST list; review of available files at the RWQCB for other

sites known to have contaminated ground water; the Department of Health Services, and Toxic Substances Control Division Hazardous Waste Control Systems (HWIS) list of hazardous waste generators.

A review of available RWQCB files identified several known sites that have contributed to ground-water degradation in the site vicinity. The locations of these facilities with respect to the La Salle property are presented on Figure 11. Details regarding the individual facility are provided below:

(A) Facility: Pilot Chemical
Address: 11756 Burke Street
Location: Located approximately 1,500 feet north to northwest of the site
Problem: Release of chlorinated solvents and TPH to soils and ground water
Status: Remedial investigations in progress

(B) Facility: Lincoln Industrial Center
Address: 12500 Slauson Avenue
Location: The area of release is located upgradient of the southern portion of the site on adjacent property
Problem: Leaking USTs, release of diesel fuel and various solvents
Status: Extraction and treatment system currently operating

(C) Facility: McKesson Chemical
Address: 11600 Pike Street
Location: Approximately one-mile southwest of the site
Problem: Degradation of soil and ground-water by chlorinated solvents and hydrocarbon compounds
Status: Remedial Investigation in progress

Several other sites known to have contributed to degradation of ground water in the vicinity were identified on the LUST list. The LUST list presents information regarding UST leaks. Several sites have been impacted by chlorinated solvents and/or metals. These sites are listed below and there locations are shown on Figure 11:

(D) Facility: Dayton Superior
Address: 9415 Sorenson Avenue
Location: Approximately 2,000 feet south of the site
Problem: Leaking UST resulting in degradation of soil and ground water with fuel hydrocarbons and aromatic hydrocarbons
Status: Case referred to RWQCB for potential ground-water investigation

(E) Facility: Peterson Purtian
Address: 9101 Slauson Avenue
Location: Approximately feet 1,500 feet southwest of the site
Problem: UST leaks resulting in release of solvents to underling soils, solvents including 1,1-DCA, 1,2-DCE, 1,1,1-TCA, TCE and PCE and were detected in soil at levels greater than 3,000 μg/kg
Status: Soil excavated and file closed

(F) Facility: Southern California Chemical Company
Address: 9951 Dice Road
Location: Approximately feet 2,000 feet southwest of the site
Problem: Degradation of soil and ground water by chlorinated solvents
Status: Remediation investigation in progress

(G) Facility: Cal Western Paint, Inc.
Address: 11748 Slauson Avenue
Location: Approximately 1,750 feet northwest of site

Problem: Leaking UST containing mineral spirits and solvents has resulted in degradation of soil and potentially ground water

Status: Closure granted by DPW; however, type of soil analyses would not have detected solvents

(H) Facility: Valvoline Oil Company

Address: 9520 John Street

Location: Approximately 2,500 feet south to southwest of the site

Problem: UST leak resulting in on-site degradation of soil and ground water, solvents included benzene, xylene, TCE, PCE, and others chemicals

Status: Remedial investigation in progress

Finally, a review of the Hazardous Waste Information System (HWIS) and CERCLIS lists indicated that there are numerous generators of hazardous waste and/or facilities that handle hazardous materials located within a one-mile radius of the site. Several of these sites are located upgradient of the subject site. Table 1 includes a list of these nearby sites that may be possible sources of chemical releases to soil and ground water. The list also indicates the address of the facilities and location of the sites relative to the regional ground-water flow direction. The distance of each facility relative to the La Salle property is shown on Figure 11.

5.2 LOCAL CONDITIONS

5.2.1 Soils

Exploratory soil borings and ground-water monitoring wells completed at the site revealed a relatively uniform layer of a dark brown, very dense, silty clay to clayey silt in the upper 25 feet of sediments. These shallow deposits represent Recent alluvium (CDWR, 1961). Underlying these deposits, sediments graded from a fine to medium and coarse-grained sand with gravel. These sediments are interpreted to represent the upper portion

of the Gage aquifer. During the installation of monitoring wells MW-4 and MW-5, a dense layer of clayey silt was encountered at approximately 45 feet bgs. The well borings were terminated at approximately 48 feet bgs whereupon the clayey silt material was still present.

5.2.2 Local Ground Water

Ground water was first encountered on-site at a depth of approximately 35 feet bgs. First encountered ground water beneath the site is unconfined and is found within coarse-grained sediments interpreted to be the top of the Gage aquifer. Within the site vicinity this portion of the Gage aquifer is not currently considered to be of beneficial use (CDWR, 1961).

On March 29, April 2, and April 5, 1991, depth to ground water was measured in on-site monitoring wells (MW-1 through MW-6 and GW-6) (Table 2). During that eight day period, a considerable amount of precipitation was received in the Los Angeles area and ground-water elevation measurements indicated an average increase of 0.27 feet. Ground-water flow direction and gradient were calculated using water level data obtained from the seven wells. The flow ground-water direction on April 2, 1991 was estimated to be toward the southwest at a gradient of 0.0025 (Figure 5). This direction of flow is slightly west of that calculated by Converse Environmental West for the adjacent property to the northwest (March, 1989 and December, 1990) and similar to that calculated by Kleinfelder, Inc. on the adjacent property to the east (August, 1989). According to information obtained from these investigations and Dames & Moore's Phase II Investigation, the direction of ground-water flow appears to be generally southwest but varies from west/southwest to south/southwest.

As discussed above in Section 5.1.2.3, ground-water quality in the region has been affected by releases of hazardous materials to soil and ground-water from several sources in the area. As a result of these releases, chlorinated solvents such as TCE, PCE and TCA as well as dissolved metals and hydrocarbon compounds have been detected in the immediate vicinity of the La Salle Parcel. Properties located directly east (Lincoln

Industrial Center) and northwest (Central Parcel) of the La Salle property have reported releases of contaminants to ground water.

Analytical data from monitoring wells located on the adjacent properties were reviewed and are shown on Figure 5. Consistent with regional ground-water conditions, PCE and TCE were the most prevalent chlorinated solvents detected on the adjacent properties. The data indicate that the highest concentrations of VOCs appear to be associated with the Central Parcel to the northwest where a former clarifier tank has been identified as a source of soil and ground-water contamination. However, VOCs are also found at high concentrations in wells located at the upgradient edge of the Central Parcel to the northwest, indicating the potential for upgradient off-site sources. With ground-water flow moving in a southwesterly direction and allowing for some cross-gradient flow, dispersion and variability in the ground-water flow direction, it is appears that ground water beneath the Central Parcel has impacted ground water underlying the La Salle Parcel. Likewise, the upgradient position of the adjacent Lincoln Industrial Center (east of the site) and the distribution of fuel hydrocarbons detected in ground water on the La Salle and Lincoln Industrial Center, strongly suggest ground-water quality on the La Salle Parcel with respect to fuel hydrocarbons has been negatively impacted by the Lincoln Industrial Center.

In summary, ground-water quality has been impacted by chlorinated solvents as indicated by ground-water monitoring well data from the area. The Central Parcel to the northwest and the Lincoln Industrial Center to the east represent known sources of ground-water contamination that appear to have impacted the La Salle Parcel.

6.0 INVESTIGATIVE RESULTS

6.1 FIELD OBSERVATIONS

Exploratory drilling completed throughout the La Salle Parcel revealed a relatively uniform layer in the upper 25 feet of sediment consisting of a dark brown, very dense, silty

clay to clayey silt. Underlying the layer, sediments graded from a fine to medium and coarse-grained sand with gravel. Shallow ground water was encountered at approximately 35 feet bgs.

During the soil sampling procedures, slightly elevated concentrations of organic vapors (0.5 to 15.0 parts per million (ppm) above background) were detected with a Micro Tip organic vapor detector. No hydrocarbon odors, soil staining or other evidence of soil contamination were observed by field sampling personnel. Logs of all exploratory borings advanced at the La Salle Parcel which include measured concentrations of organic vapors in soil samples are presented in Appendix C.

6.2 SOIL ANALYTICAL DATA

Due to the relatively large volume of analytical data associated with this investigation, the analytical results are discussed below by laboratory analysis type, and summarized in Table 3. The analyses are discussed as follows:

- Total petroleum hydrocarbons (as gasoline);
- Total recoverable hydrocarbons;
- Aromatic hydrocarbons compounds;
- Volatile organic compounds;
- Semi-volatile organic compounds;
- Title 22 metals;
- Total Lead, and
- pH.

Laboratory analytical reports and completed chain-of-custody records are presented in Appendix D.

Total Petroleum Hydrocarbons

Three selected soil samples collected in each angle boring A-1, A-3 and A-4 as well as four selected samples from angle boring A-2 were analyzed for TPH (as gasoline) by EPA Method 8015 modified. Borings A-1 and A-2 were located in the immediate vicinity of the former USTs (Figures 12 and 13). Borings A-3 and A-4 were advanced in the soils underlying the former underground clarifier and service pit areas, respectively (Cross-sections A-3 and A-4, Figures 14 and 15). Analytical results revealed no detectable levels of TPH (as gasoline) present in the soil samples that were analyzed (Table 3).

Two selected soil samples collected from each monitoring well were analyzed for TPH (as gasoline). In addition, two soil samples from wells MW-5 and MW-6 were analyzed for TPH (as diesel). Analytical results revealed no detectable levels of TPH as gasoline or diesel was present in the soil samples that were analyzed (Table 3).

Total Recoverable Hydrocarbons

Three soil samples collected at 10, 15 and 25 feet bgs from each boring B-1, B-2 and B-3 were analyzed for TPH by EPA Method 418.1. Borings B-1 through B-3 were located in the former locations of the hydraulic hoist associated with Building 1. Analytical results revealed non-detectable concentrations (less than 20.0 mg/kg) of TPH present (Table 3).

Aromatic Hydrocarbons Compounds

Three selected soil samples from angle boring A-1 and four selected samples from angle boring A-2 were also analyzed for aromatic hydrocarbon compounds (BTXE) by EPA Method 8020. Analytical results revealed non-detectable concentrations of aromatic hydrocarbon compounds present (Table 3).

Volatile Organic Compounds

Three soil samples from each angle boring A-3 and A-4 were analyzed for VOCs by EPA Method 8240. As mentioned above, borings A-3 and A-4 were advanced in the soil

underlying the underground concrete-lined clarifier and service pit, respectively. No detectable concentrations of VOCs were reported (Table 2).

Two selected soil samples collected from each monitoring well were analyzed for VOCs. Analytical results revealed low levels of tetrachloroethene (PCE) of 53.0 ug/kg in a sample collected during the installation of well MW-1 within the saturated zone at 40 feet bgs (Table 3). All remaining analytical results revealed no detectable levels of VOCs in soil samples that were analyzed.

Semi-volatile Organic Compounds

One selected soil sample from each boring A-3 and A-4, situated in the vicinity of the underground clarifier and service pit areas, was analyzed for SVOCs by EPA Method 8270. Analytical result indicated non-detectable concentrations of SVOCs (Table 3).

Title 22 Metals

Similar to SVOCs, one selected soil sample from each boring A-3 and A-4 was analyzed for Title 22 metals by EPA method 6010. Analytical result revealed metal concentrations that ranged from non-detectable levels to low levels. The low levels are believed to be background metal concentrations that are associated with naturally occurring minerals.

Total Lead

Three selected soil samples collected in each angle boring A-1 and A-2 were analyzed for total lead by EPA Method 7421. Analytical results indicated low levels of lead present which ranged from 3.0 to 8.0 mg/kg. These low levels are considered insignificant and believed to be associated with naturally occurring minerals (Table 3).

pH

Three selected soil samples from each angle boring A-3 and A-4, located within the vicinity of the clarifier and service pit areas, were analyzed for pH by EPA Method 9045.

pH values ranged from 7.50 to 8.05 and thus are considered to be essentially neutral (Table 3).

Summary

As shown on Figures 12 through 15, soil samples were collected in soils underlying the above-referenced features of environmental concern. In summary, analytical results for selected soil samples revealed no evidence of soil contamination associated with the UST, underground clarifier, service pit, or hydraulic hoist areas.

6.3 GROUND-WATER ANALYTICAL DATA

6.3.1 On-site Wells

Ground-water samples from each of the seven on-site wells, a blind duplicate, and a trip blank were submitted for chemical analyses that included VOCs, SVOCs, TPH, lead, chromium, pH, and turbidity analyses. The analytical results are summarized in Table 4. The findings are summarized below:

Chlorinated Solvents

- PCE and TCE were detected in samples from each well. The highest concentrations detected were in water samples collected from well MW-1 (160 μg/l and 7.7 μg/l, respectively) and well MW-2 (280 μg/l and 22 μg/l, respectively).
- The detected concentrations of PCE exceed the California Maximum Contaminant Level (MCL) of 5 μg/l for drinking water in each of the on-site wells.
- Detected concentrations of TCE exceed the MCL of 5 μg/l in MW-1, MW-2, and MW-3.
- Detected concentrations of 1,2-DCA and carbon tetrachloride exceed MCLs of 0.5 μg/l in MW-3 and the blind duplicate, respectively. Carbon tetrachloride, which is commonly used in analytical laboratories as a solvent, may be indicative of

contamination of the sample by the laboratory rather than ground-water contamination.

- Other VOCs detected below California drinking water standards included:
  - Toluene in a sample collected from well MW-3 at a concentration of 5.8 μg/l. No MCL for toluene has been established, however, there is a DHS action level (AL) of 100 μg/l;
  - Xylene in a sample collected from well MW-3 at a concentration of 1.4 μg/l. Xylene has an established MCL of 1730 μg/l.
  - 1,1-DCA in a samples from well MW-6 at a concentration of 0.6 μg/l. 1,1-DCA has an established MCL of 5 μg/l.
  - Trichlorofluoromethane in a sample from wells MW-1, MW-2, and GW-6 at concentrations of 2.3, 3.0, and 1.1 μg/l, respectively. Trichlorofluoromethane has an established MCL of 150 μg/l.
  - Chloroethane in a sample from wells MW-5 and MW-6 at concentrations of 1.1 and 1.0 μg/l, respectively. There is no MCL or AL established for chloromethane.

Fuel Hydrocarbons

- TPH analyses modified for diesel indicated that low concentrations were detected at or below 1 mg/l in wells MW-3, MW-5, MW-6, and GW-6.
- Low concentrations of TPH as gasoline were detected in wells MW-1 and MW-2 (0.07 and 0.14 mg/l, respectively).
- Low concentrations of toluene (5.8 μg/l) and xylene (1.4 μg/l) were found in MW-3. The levels found were below the AL for toluene (100 μg/l) and the MCL for xylene (1750 μg/l).

Metals

- Lead was found at concentrations above the MCL in MW-1 and MW-2. Lead was detected in ground water at concentrations less than the MCL of .05 mg/l in the remaining monitoring wells.
- Chromium was found at concentrations above the MCL of 0.05 mg/l in each of the monitoring wells on-site.

Semi-Volatile Organic Compounds

- SVOCs were not detected in the ground-water samples.

Figure 5 shows the distribution of chemical compounds found in ground-water samples. The highest detected concentrations of VOCs were found in monitoring wells MW-1 and MW-2. MW-1 and MW-2 are located along the western boundary of the La Salle Parcel, cross-gradient from the former clarifier on the Central Parcel. The concentration of PCE found in MW-1 and MW-2 was several times greater than the concentrations found in the other monitoring wells on-site. Concentrations of detected VOCs in wells located downgradient of potential on-site sources (MW-3, MW-4, MW-5) are generally lower than those concentrations detected in upgradient and cross-gradient wells MW-1, MW-2 and GW-6.

Trace concentrations (1.0 mg/l) of TPH as diesel fuel were detected in wells MW-5 and MW-6 located downgradient or cross-gradient of the known ground-water contamination problem at the Lincoln Industrial Center located east of the La Salle Parcel. The highest concentration of TPH as diesel (1.0 mg/l) was detected at the northeast (upgradient) end of the La Salle Parcel in GW-6. BTXE was not detected in MW-5, MW-6, and GW-6. There is currently not a State of California MCL or AL for diesel in ground water. Toluene and xylene detected in conjunction with diesel fuel in MW-3 were detected below State regulated levels. TPH as gasoline was detected in MW-1 and MW-2, both located upgradient or cross-gradient from former potential on-site sources.

Laboratory analyses for metals indicated the presence of chromium at concentrations greater than the MCL of 0.05 mg/l in each on-site well. The highest concentrations of chromium were detected in wells MW-1, MW-2 and GW-6, all located upgradient or cross-gradient from former potential on-site sources. This distribution clearly suggests an offsite source of the chromium detected in ground water. The highest detected levels of lead were also found in wells MW-1 and MW-2 which are located cross-gradient or upgradient positions from potential on-site source areas.

7.0 DISCUSSION

7.1 POTENTIAL ON-SITE SOURCES

Three factors strongly suggest that potential on-site sources formerly located on the La Salle Parcel (such as clarifiers and underground fuel storage tanks) have not caused contamination of soil and ground water. These factors include analytical data generated by PIC Inc., during removal of the potential on-site sources, soil analytical data developed by Dames & Moore during the Phase II investigation, and ground-water analytical data obtained from on-site monitoring wells and off-site wells located in the immediate site vicinity.

The results of soil sampling conducted during removal of several potential on-site sources strongly suggest that those features did not cause significant contamination of soil and ground water. Two clarifier pits and two underground storage tanks were removed from the La Salle Parcel in March, 1988 by PIC, Inc. During the removal, eight soil samples were collected from the excavations and spoils pile and analyzed for TPH. Five of the samples did not yield detectable concentrations of TPH. Of the three samples that did yield low levels of petroleum hydrocarbons, the highest TPH concentration detected was 19 mg/kg.

Secondly, approximately 50 soil samples were collected at and in the vicinity of former potential on-site sources of contamination as part of Dames & Moore's Phase II investigation. No field evidence indicating the presence of subsurface contamination (such as high OVA readings, stained soil or hydrocarbon odors) was noted. Of the approximately 50 samples collected, 22 were analyzed for contaminants typically associated with the former potential sources. With the exception of one sample taken from the saturated zone, analytical results did not indicate detectable or elevated levels of contamination in the samples that were analyzed. Moreover, to a depth of approximately 25 feet, the soil borings drilled by Dames & Moore encountered low permeability clayey silt that would impede the downward migration of potentially leaked fluids.

Finally, the distribution of ground-water contamination on the La Salle Parcel and in the site vicinity also strongly suggests that former potential sources have not contributed to the ground-water contamination that has been detected on-site. This opinion is based on the nature and generally higher concentrations of chlorinated solvents detected in: (1) off-site wells located north and northwest of the site on the adjacent property; and (2) on-site wells MW-1 and MW-2 located along the northwest property boundary. These wells are located generally upgradient or cross-gradient to former potential on-site sources. Wells MW-3, MW-4, MW-5 and MW-6 located cross-gradient and downgradient from MW-1 and MW-2 (and downgradient from former potential on-site sources) generally contained substantially lower concentrations of chlorinated solvents. Similarly, the highest concentrations of lead and chromium were detected in on-site wells located near property boundaries upgradient or cross-gradient from former potential on-site sources.

7.2 OFF-SITE SOURCES

Several factors also strongly suggest that off-site sources have impacted ground-water quality on the La Salle property. Two sites with documented ground-water contamination are located directly adjacent to the site. Due to variation in ground water flow direction from south-southwest to south-southeast, both of these adjacent sites appear to have

impacted ground-water quality at the site. Several other contaminated sites that may have impacted the site have been identified in this site area. Finally, numerous potential sources have also been identified in the site area. At least 10 of these potential source sites are located less than one-half mile upgradient of the site. These factors are discussed below in greater detail.

Extensive chlorinated solvent contamination has been detected in ground water in the 11 monitoring wells located on the Central Parcel northwest of the La Salle Parcel. A former clarifier operated by Chrysler has been identified as a source of ground-water contamination. The former clarifier location is approximately 450 feet northwest of the La Salle Parcel. The distribution of ground-water analytical data in this area indicate the highest concentrations of chlorinated solvents have been detected on the Central Parcel. Total chlorinated solvent concentrations appear to extend from the Central Parcel onto the La Salle Parcel, decreasing significantly in concentrations to the south-southeast as on-site wells generally yielded lower levels of chlorinated solvents (Figure 5). In addition, chlorinated solvents have been detected along the northeast (upgradient) edge of the Central Parcel, suggesting other off-site sources of ground-water contamination.

Directly east of the La Salle Parcel is the Lincoln Industrial Center. Fuel hydrocarbons are the predominant ground-water contaminant at this site. However, chlorinated solvents have also been detected on the Lincoln Industrial Center in wells that are located upgradient of the La Salle Parcel. PCE and TCE concentrations detected in wells on the Lincoln Industrial Center are generally higher than the concentrations detected in the nearest on-site wells including MW-3, MW-4, MW-5, and MW-6 suggesting these contaminants may have migrated from the adjacent Lincoln Industrial Center onto the La Salle Parcel.

Several other known sources of soil and/or ground-water contamination have been identified within a 1/2 mile radius of the La Salle Parcel. Although none of these are located directly upgradient of the La Salle Parcel, several are located cross-gradient and

therefore may also have impacted the ground-water quality at the La Salle Parcel (Figures 10, 11).

In summary, adjacent properties to the northwest (Central Parcel) and east (Lincoln Industrial Center) represent known sources of ground-water contamination that appear to have impacted the La Salle Parcel. In general, the La Salle Parcel yielded total chlorinated solvent concentrations in ground-water that were higher than those detected on the La Salle Parcel. Additionally, numerous other potential and several known off-site sources have been identified in the site area. Based on these factors, it is likely that on-site ground-water contamination is attributable to off-site sources.

7.3 REGULATORY OVERVIEW

Investigation and remediation of soil and ground water contamination falls under the jurisdiction of many California government agencies. The source of a hazardous materials release as well as the type, amount, and extent of contamination will generally dictate which agency or agencies may potentially become involved in providing oversight and/or approval of the investigation and remediation.

The two state agencies providing the most input in the site mitigation process are the California Regional Water Quality Control Board (RWQCB) and the California Department of Health Services, Toxic Substances Control Program (DHS). Based on state regulations and policies, both agencies have been charged with focusing their oversight efforts on identifying the source(s) of potential release of hazardous materials to the environment.

It has been Dames & Moore's experience that RWQCB staff in Los Angeles will attempt to locate the "discharge" or source of a release for purposes of initiating enforcement actions to effect a cleanup of a site. Mr. Joshua Workman, manager of the Los Angeles RWQCB underground tank section, has indicated that if a site can be demonstrated

it was or is not a source of ground-water contamination, the RWQCB will not initiate an enforcement action, even if the site overlies a contaminated aquifer.

DHS has developed an internal policy that specifically states that it will not pursue or enforce action against a person who is a responsible party solely on the basis of ownership of land overlying contaminated ground water. This policy has been stated in a Toxic Substances Control Division Management Memo #90-11 and is attached as Appendix E.

8.0 CONCLUSIONS

Based on the findings of this investigation, it is our opinion that ground-water contamination above California drinking water standards that has been detected on site appears to be related to off-site sources. This opinion is based primarily on the following factors which are discussed in more detail in the preceding sections:

- Absence of detectable petroleum hydrocarbon contamination at the time of removal of the USTs and clarifier pits;

- Presence of low permeability clayey soils that would impede the subsurface migration of leaked fluids toward ground water in the event that leakage occurred in the past;

- Absence of detectable soil contamination or evidence of contamination (such as soil staining or hydrocarbon/solvent odors) during Dames & Moore's Phase II investigation;

- Existence of well documented regional chlorinated solvent ground-water contamination problems;

- Distribution of contaminants in ground water collected from on-site wells and wells on adjacent properties that strongly suggests off-site sources;

- Presence of identified off-site sources of ground-water contamination on properties located directly adjacent to the site;

- Presence of other agency-listed sites in the area that may have negatively impacted ground-water quality at the site; and

- Presence of numerous potential sources of soil and ground-water contamination, particularly upgradient of the site.

In addition, based on the results of the Phase II investigation and Dames & Moore's experience on similar projects, interaction with regulatory agency personnel, and current understanding of RWQCB and DHS policies, it is our opinion that it is highly unlikely that an owner or operator of the La Salle property would be held liable by a state agency for the mitigation of ground-water contamination that has been detected and currently exists in monitoring wells installed on site.

9.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon observations of the site and our interpretation of the available analytical data as described in this report. They are intended exclusively for the purpose outlined herein and at the site location and project indicated. This report is for the sole use of Catellus Development Corporation. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and any reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user(s).

It should be recognized that this study was not intended to be definitive investigation of contamination at the subject property. Given that the scope of services for this investigation was limited, it is possible that currently unrecognized contamination may exist a the site and that the level of this contamination may very across the site.

Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those conditions reasonably foreseeable. They cannot necessarily apply to site changes or changes in applicable standards and practices of which this office is not aware and has not had the opportunity to evaluate. This report is intended for use in its entirety; no excerpt may be taken to be representative of the findings of this investigation.

-ooo-

TABLE 4
GROUND-WATER ANALYTICAL RESULTS
LA SALLE PARCEL

Well Sample No.	1,1 DCE	PCE	TCE	TCFM	1,2 DCA	B	E	T	X	Chloro-ethane	1,1-DCA	Carbon-tet	Chloro-form	Total Lead mg/l	Total Chromium mg/l	TPH Diesel mg/l	TPH Gasoline mg/l	EPA 625 Semi-Volatiles	pH	Turbidity NTU
MW-1	1.5	160	7.7	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.052	0.14	ND	0.07	ND	7.05	3200
MW-2	3.9	280	22	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.138	0.22	ND	0.14	ND	7.15	4600
MW-3	2.1	16	7.0	ND	1.6	ND	ND	5.8	1.4	ND	ND	ND	ND	0.046	0.09	0.13	ND	ND	7.25	2600
MW-4	ND	20	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.035	0.093	ND	ND	ND	7.15	1600
MW-5	ND	30	3.4	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	0.033	0.09	0.81	ND	ND	7.10	1900
MW-6	ND	20	1.3	ND	ND	ND	ND	ND	ND	1.0	0.6	ND	ND	0.031	0.06	0.05	ND	ND	7.35	1300
GW-6	ND	2.9	2.5	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.3	1.0	ND	ND	7.20	4600
QA/QC	0.8	2.4	3.0	ND	0.8	ND	ND	ND	ND	ND	ND	1.0	1.0	0.018	0.06	0.06	ND	ND	7.20	1200
MCL	6	5	5	150	0.5	1.0	680	NONE *	1730	None	5	0.5	100	0.05	0.05	None	None	NA	NA	NA

Units	ug/l unless noted otherwise	1,1 DCA	1,1 dichloroethane
ND	Not Detected	1,1 DCE	1,1 dichloroethene
QA/QC	From MW-4	TCE	trichloroethene
B	benzene	PCE	tetrachloroethene
T	toluene	TCFM	trichlorofluoromethane
X	xylenes	NA	not applicable
E	ethylbenzene	NONE*	DHS action level of 100 mg/L applies
MCL	maximum contaminant level	1,2 DCA	1,2 dichloroethane
Carbon-tet	carbontetrachloride		

TABLE 1
LIST OF POTENTIAL SOURCES
OF SOIL AND GROUND-WATER CONTAMINATION •

ID No.	Site	Address	Location
1.	Southern California Edison	Smith and Geary Ave.	downgradient
2.	Foremost McKesson	9005 Sorenson Ave.	downgradient
3.	Site omitted		
4.	Angeles Chemical	8915 Sorenson St.	downgradient
5.	Site omitted		
6.	Santa Fe Rubber Products	12306 E. Washington Blvd.	downgradient
7.	Ultra Sonic Deburring	8136 Byron Rd.	upgradient
8.	Russ Barrett Corporation	8189 Byron Rd.	upgradient
9.	Refractory Composites	12220 A Rivera Rd.	upgradient
10.	Omega Chemical Corporation	12504 East Whittier Blvd.	upgradient
11.	Fred R. Rippy, Inc.	12471 East Washington Blvd.	upgradient
12.	Western Screw Products	11770-11780 Slauson Ave.	cross-gradient
13.	Fine Line Paint Corporation	12200 Los Nietos Rd.	downgradient
14.	West Bent Bolt	8623 South Dice Rd.	downgradient
15.	Santa Fe Enameling & Metal Finish	8427 Secura Way	upgradient
16.	Poles by Lamplighter	8400 Secura Way	upgradient
17.	Hi Lite Manufacturing Company, Inc.	8515 Chetle Ave.	upgradient
18.	Eastman-Kodak R&D Center	12100 Rivera Rd.	upgradient
19.	Foss Plating Company, Inc.	8140 Secura Way	upgradient
20.	Gold, Inc.	11940 East Washington Blvd.	upgradient
21.	Mission Uniform Service	11920 East Washington Blvd.	upgradient
22.	Cal-Tron Plating, Inc.	11919 Rivera Rd.	upgradient
23.	Hood Corporation	8201 Sorenson Ave.	upgradient

• Individual sites are plotted on Figure 11.

TABLE 2
MONITORING WELL INFORMATION/GROUND-WATER ELEVATIONS
LA SALLE PARCEL

MONITORING WELL	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	GW-6
TOTAL DEPTH OF WELL (FT)	48	48	47	47	49	48	50
SCREEN INTERVAL (FT)	23-48	23-48	22-47	22-47	24-49	23-48	30-50
ELEV. OF WELL TOP OF CASING (FT-MSL)	143.75	144.19	144.27	144.63	144.12	144.26	145.93
DEPTH TO WATER FROM TOP OF CASING (FT) ON 4/5/91	30.86	32.40	33.00	33.10	32.10	31.75	32.10
ELEV. OF WATER (FT-MSL)	112.89	111.79	111.27	111.53	112.02	112.51	113.83
DATE INSTALLED	MAR-91	MAR-91	MAR-91	MAR-91	MAR-91	MAR-91	1990

CATELLUS/MONITORING.TBL

TABLE 2 (continued)
SOIL LABORATORY DATA
MONITORING WELL SOIL BORINGS
LA SALLE PARCEL

		Boring	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3
		Sample Number	3A	7A	4A	7A	4A	8A
Analytical Method	Compounds	Depth (ft.)	20.0	40.0	20.0	40.0	20.0	50.0
EPA 8240	Total Volatile Organic Compounds (ug/kg)		ND	ND	ND	ND	ND	ND
EPA 8015	Total Petroleum Hydrocarbons (as gasoline) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EPA 8015	Total Petroleum Hydrocarbons (as diesel) (mg/kg)		NA	NA	NA	NA	NA	NA

EXPLANATION:

NA: Indicates designated test was not performed.
<: Indicates designated compound was not detected at concentrations at or above given analytical detection limit.

DJO:\geosci\dj\o\LASALLE.TB4

TABLE 3
ANALYTICAL LABORATORY DATA
ANGLE SOIL BORINGS
LA SALLE PARCEL

Analytical Method	Compounds	Boring	A-1	A-1	A-1	A-2	A-2	A-2	A-2
		Sample Number	3A	4A	5A	3A	4A	5A	6A
		Depth * (ft.)	16.4	20.5	24.5	16.4	20.5	24.6	28.7
EPA 9045	pH		NA	NA	NA	NA	NA	NA	NA
EPA 8020	Aromatic Volatile Organics (mg/kg)								
	Benzene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Toluene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Ethylbenzene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Xylene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
EPA 8240	Volatile Organic Compounds (ug/kg)		NA	NA	NA	NA	NA	NA	NA
EPA 8270	Semi-Volatile Organic Compounds (ug/kg)		NA	NA	NA	NA	NA	NA	NA
EPA 8015	Total Petroleum Hydrocarbons (Gasoline) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EPA 7421	Total Lead (mg/kg)		8.0	7.0	7.0	7.0	8.0	7.0	3.0

EXPLANATION:

*: Depth measured from below ground surface.
NA: Indicates designated test was not performed.
<: Indicates designated compound was not detected at concentrations at or above the given analytical detection limit.

DJD:\geosci\djo\LASALLE.TB2

TABLE 3 (continued)
ANALYTICAL LABORATORY DATA
VERTICAL SOIL BORINGS
LA SALLE PARCEL

		Boring Number	B-1	B-1	B-1	B-2	B-2	B-2	B-3	B-3	B-3
		Sample Number	2A	3A	5A	2A	3A	5A	3A	3A	5A
Analytical Method	Compounds	Depth (ft.)	10.0	15.0	25.0	10.0	15.0	25.0	10.0	15.0	25.0
EPA 418.1	Total Petroleum Hydrocarbons (mg/kg)		<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0

EXPLANATION:

NA: Indicates designated test was not performed
<: Indicates designated compound was not detected at concentrations at or above given analytical detection limit.

djo:\geosc\djo\LASALLE.TB1

TABLE 3 (continued)
ANALYTICAL LABORATORY DATA
MONITORING WELL SOIL BORINGS
LA SALLE PARCEL

		Boring	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	MW-6	MW-6
		Sample Number	3A	7A	4A	7A	4A	8A	2A	9A	2A	7A	4A	8A
Analytical Method	Compounds	Depth (ft.)	20.0	40.0	20.0	40.0	20.0	50.0	10.0	45.0	10.0	40.0	20.0	40.0
EPA 8240	Volatile Organic Compounds (ug/kg)		ND	53.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 8015	Total Petroleum Hydrocarbons (as gasoline) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EPA 8015	Total Petroleum Hydroarons (as diesel) (mg/kg)		NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0

EXPLANATION:

NA: Indicates designated test was not performed.
<: Indicates designated compound was not detected at concentrations at or above given analytical detection limit.

D:\O\geosc\Adjo\LASALLE.TB5

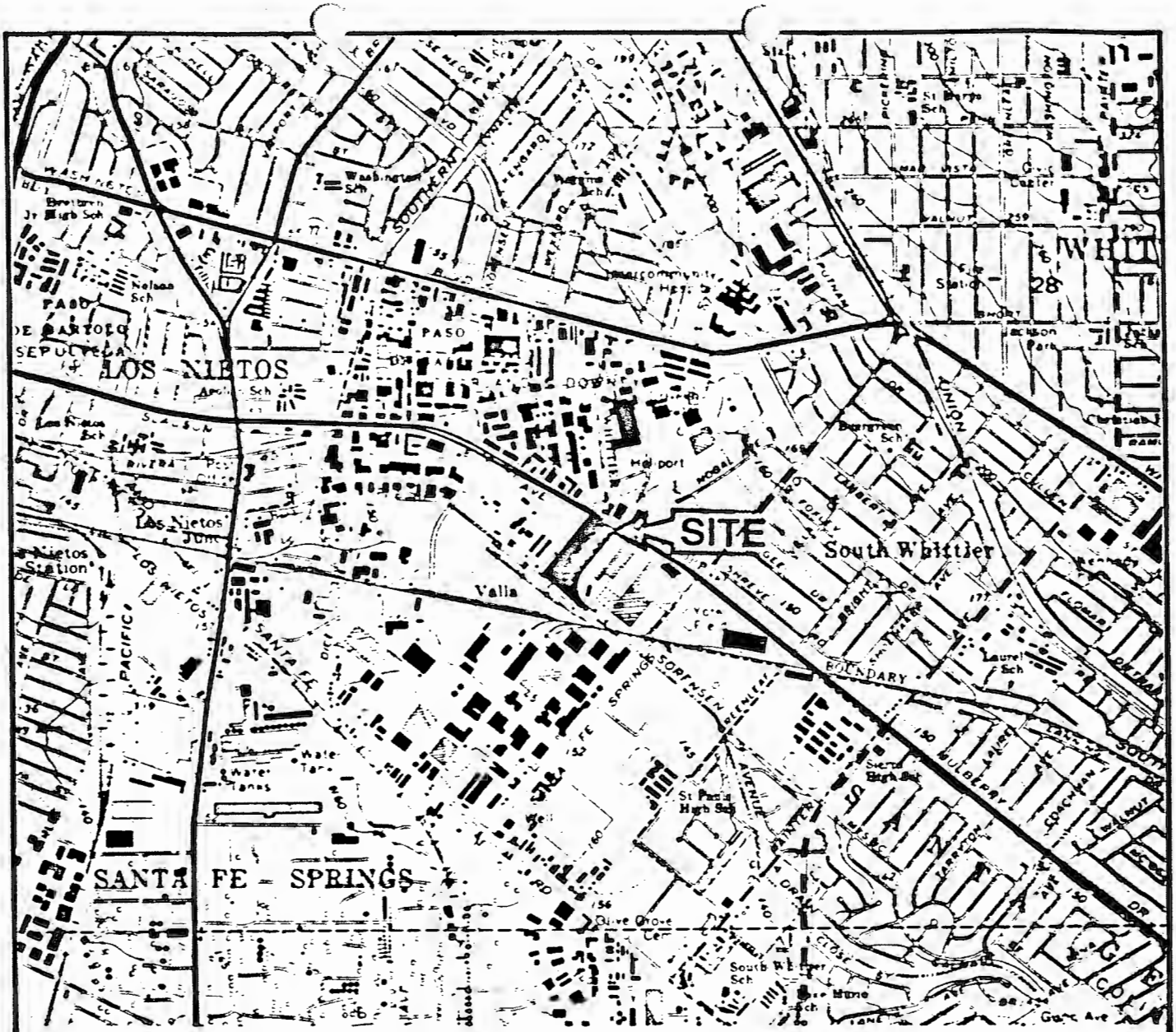
TABLE 3 (continued)
ANALYTICAL LABORATORY DATA
ANGLE SOIL BORINGS
LA SALLE PARCEL

		Boring	A-3	A-3	A-3	A-4	A-4	A-4
		Sample Number	2A	3A	5A	4A	5A	6A
Analytical Method	Compounds	Depth * (ft.)	12.3	16.4	24.6	16.4	20.5	24.6
EPA 9045	pH		7.75	7.85	8.05	7.50	7.55	7.55
EPA 8020	Aromatic Volatile Organics (mg/kg)							
	Benzene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Toluene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Ethylbenzene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Xylene		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
EPA 8240	Volatile Organic Compounds (ug/kg)		ND	NA	NA	NA	NA	NA
EPA 8270	Semi-Volatile Organic Compounds (ug/kg)		NA	ND	NA	ND	NA	NA
EPA 8015	Total Petroleum Hydrocarbons (Gasoline) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EPA 7421	Total Lead (mg/kg)		<7.4	NA	NA	<7.5	NA	NA

EXPLANATION:

*: Depth measured from below ground surface.
NA: Indicates designated test was not performed.
<: Indicates designated compound was not detected at concentrations at or above the given analytical detection limit.

DJO:\geosc\djo\LASALLE.TB3



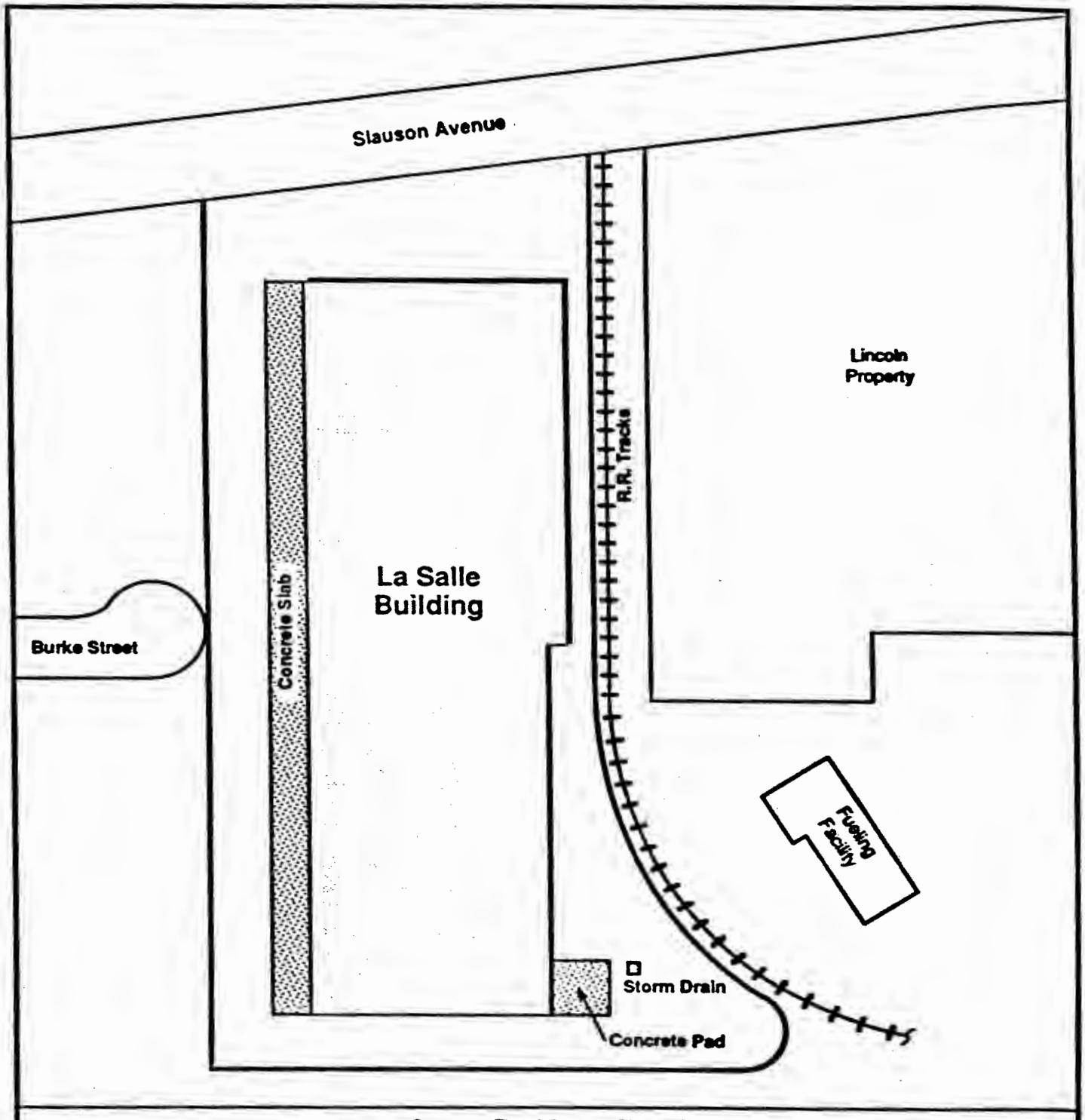
VICINITY MAP

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California

For Catellus Development Corporation

REFERENCE: USGS 7.5 Minute Series Topographic Map, "Whittier, California" Quadrangle, Photorevised 1981

Dames & Moore
FIGURE 1

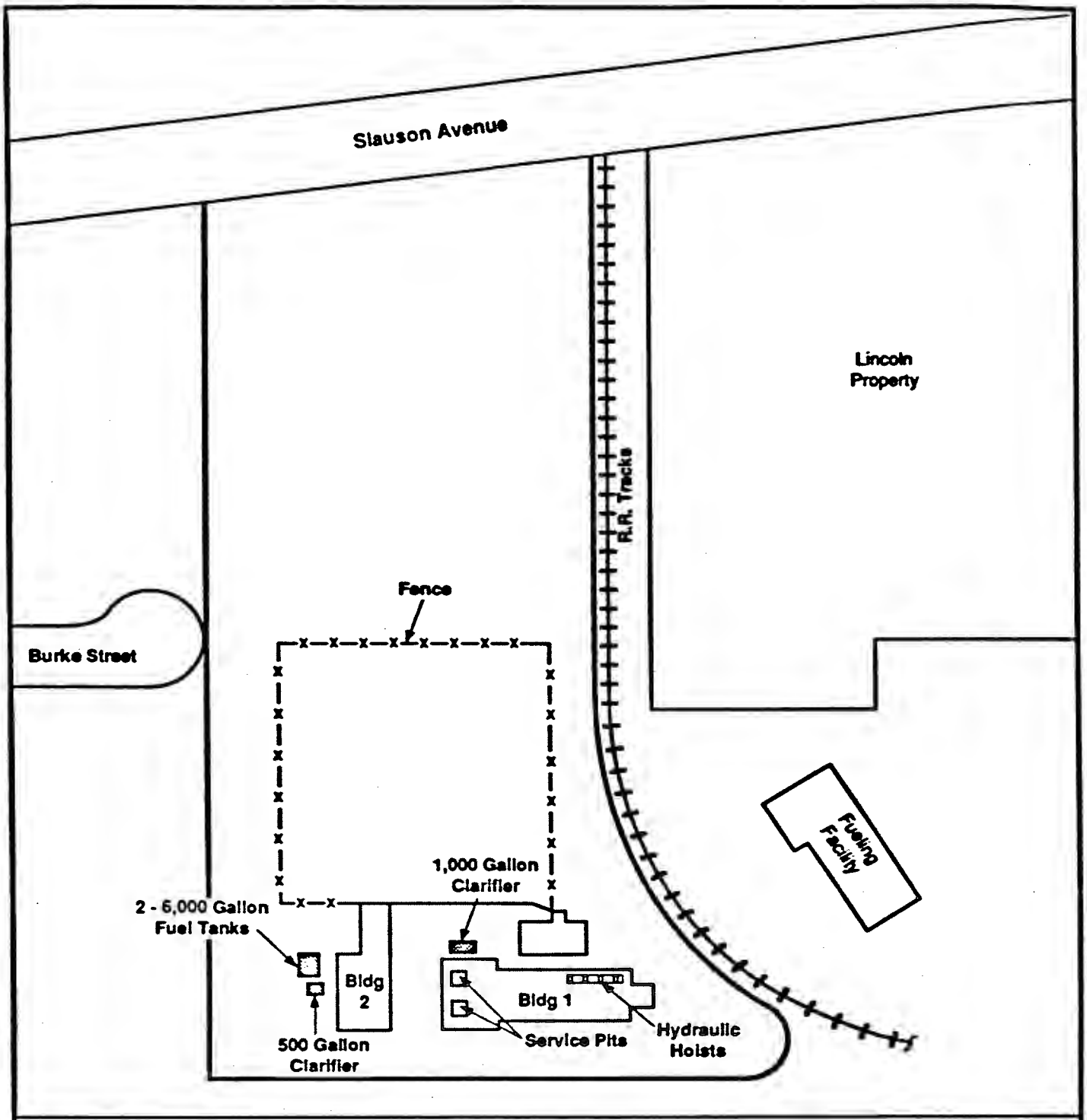


PLOT PLAN

LA SALLE BUILDING
12310 Slauson Avenue
Santa Fe Springs, California

For Catellus Development Company

Dames & Moore
FIGURE 2

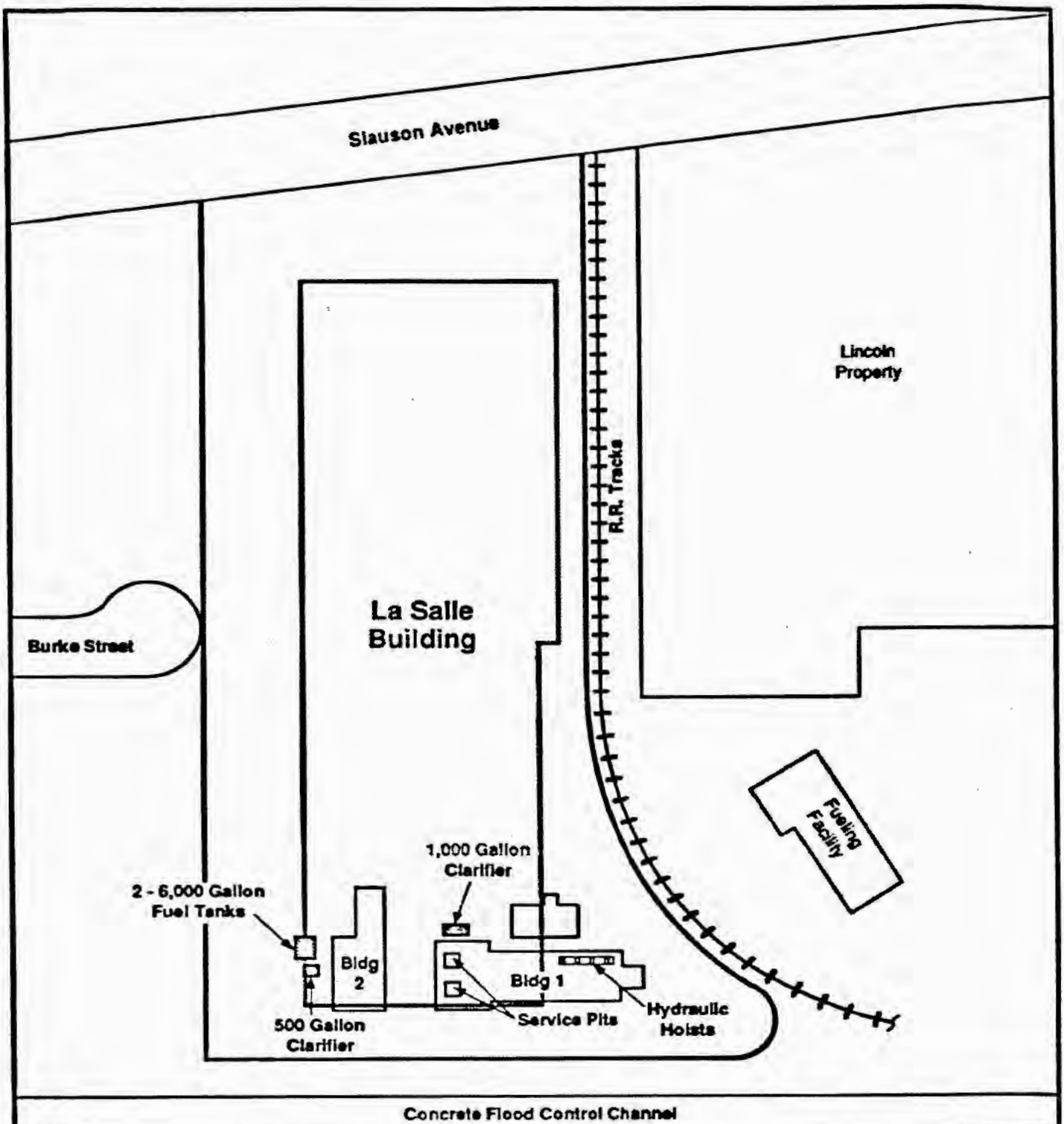


PLOT PLAN

PREVIOUS BUILDINGS
12310 Slauson Avenue
Santa Fe Springs, California

For Catellus Development Company

Dames & Moore
FIGURE 3

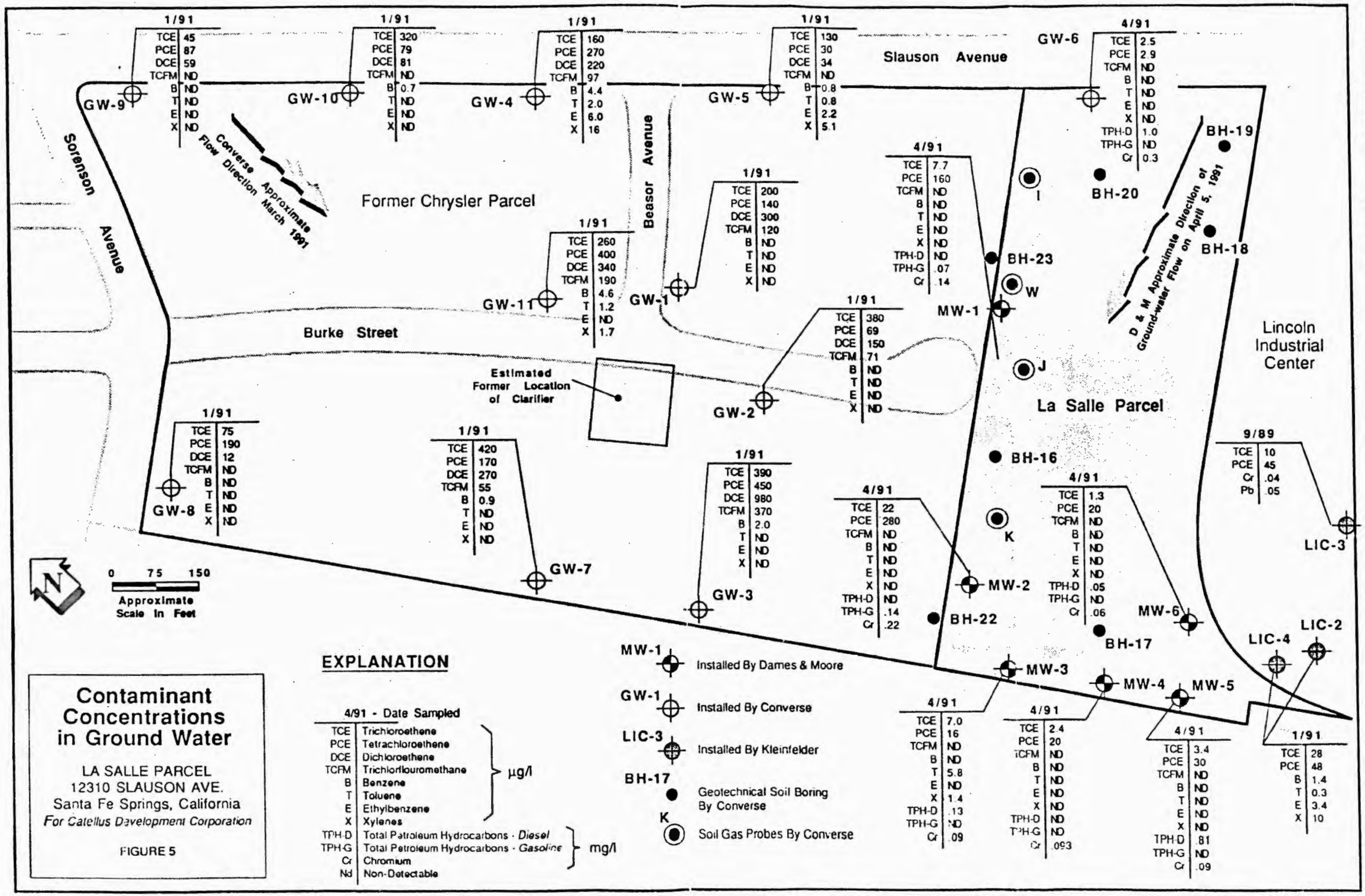


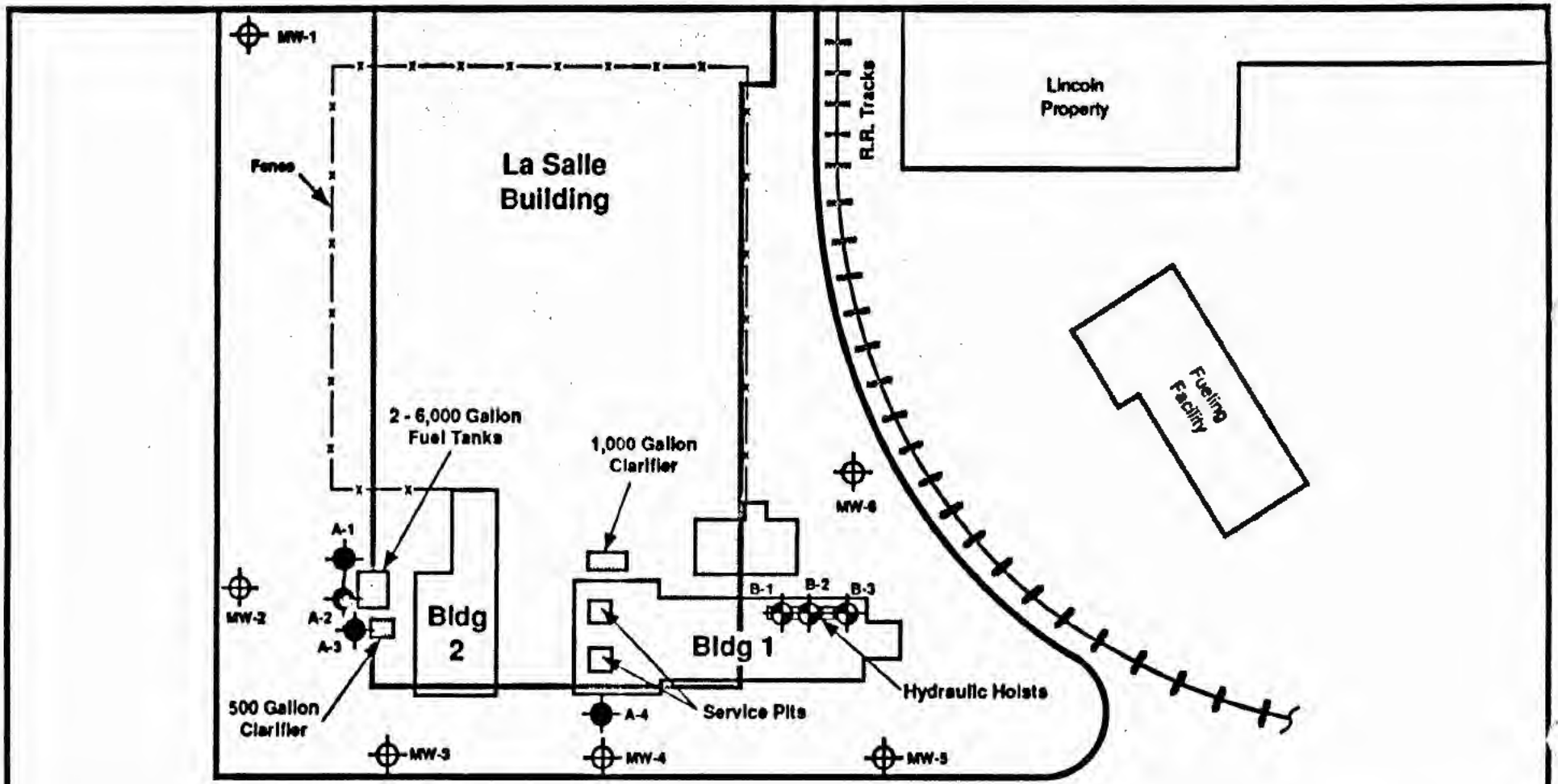
PLOT PLAN

PREVIOUS BUILDINGS
AND LA SALLE BUILDING
12310 Slauson Avenue
Santa Fe Springs, California

For Catellus Development Company

Dames & Moore
FIGURE 4


GW-9
1/91
TCE 45
PCE 87
DCE 59
TCFM ND
B ND
T ND
E ND
X ND
GW-10
1/91
TCE 320
PCE 79
DCE 81
TCFM ND
B 0.7
T ND
E ND
X ND
GW-4
1/91
TCE 160
PCE 270
DCE 220
TCFM 97
B 4.4
T 2.0
E 6.0
X 16
GW-5
1/91
TCE 130
PCE 30
DCE 34
TCFM ND
B 0.8
T 0.8
E 2.2
X 5.1
GW-6
4/91
TCE 2.5
PCE 2.9
TCFM ND
B ND
T ND
E ND
X ND
TPH-D 1.0
TPH-G ND
Cr 0.3
Slauson Avenue
Sorenson Avenue
Converse Flow Direction Approximate March 1991
Former Chrysler Parcel
Beasor Avenue
GW-11
1/91
TCE 260
PCE 400
DCE 340
TCFM 190
B 4.6
T 1.2
E ND
X 1.7
GW-1
1/91
TCE 200
PCE 140
DCE 300
TCFM 120
B ND
T ND
E ND
X ND
4/91
TCE 7.7
PCE 160
TCFM ND
B ND
T ND
E ND
X ND
TPH-D ND
TPH-G .07
Cr .14
I
BH-20
BH-19
BH-18
D & M Approximate Direction of Ground-water Flow on April 5, 1991
BH-23
W
MW-1
J
Burke Street
Estimated Former Location of Clarifier
GW-2
1/91
TCE 380
PCE 69
DCE 150
TCFM 71
B ND
T ND
E ND
X ND
Lincoln Industrial Center
La Salle Parcel
BH-16
9/89
TCE 10
PCE 45
Cr .04
Pb .05
LIC-3
1/91
TCE 75
PCE 190
DCE 12
TCFM ND
B ND
T ND
E ND
X ND
GW-8
1/91
TCE 420
PCE 170
DCE 270
TCFM 55
B 0.9
T ND
E ND
X ND
GW-7
1/91
TCE 390
PCE 450
DCE 980
TCFM 370
B 2.0
T ND
E ND
X ND
GW-3
4/91
TCE 22
PCE 280
TCFM ND
B ND
T ND
E ND
X ND
TPH-D ND
TPH-G .14
Cr .22
K
4/91
TCE 1.3
PCE 20
TCFM ND
B ND
T ND
E ND
X ND
TPH-D .05
TPH-G ND
Cr .06
MW-2
BH-22
MW-6
BH-17
LIC-4
LIC-2
MW-3
MW-4
MW-5
4/91
TCE 7.0
PCE 16
TCFM ND
B ND
T 5.8
E ND
X 1.4
TPH-D .13
TPH-G ND
Cr .09
4/91
TCE 2.4
PCE 20
TCFM ND
B ND
T ND
E ND
X ND
TPH-D ND
TPH-G ND
Cr .093
4/91
TCE 3.4
PCE 30
TCFM ND
B ND
T ND
E ND
X ND
TPH-D .81
TPH-G ND
Cr .09
1/91
TCE 28
PCE 48
B 1.4
T 0.3
E 3.4
X 10
N
0 75 150
Approximate Scale In Feet
EXPLANATION
4/91 - Date Sampled
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene
TCFM Trichlorfluoromethane
B Benzene
T Toluene
E Ethylbenzene
X Xylenes
µg/l
TPH-D Total Petroleum Hydrocarbons - Diesel
TPH-G Total Petroleum Hydrocarbons - Gasoline
Cr Chromium
Nd Non-Detectable
mg/l
MW-1 Installed By Dames & Moore
GW-1 Installed By Converse
LIC-3 Installed By Kleinfelder
BH-17 Geotechnical Soil Boring By Converse
K Soil Gas Probes By Converse
Contaminant Concentrations in Ground Water
LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California
For Catellus Development Corporation
FIGURE 5



PLOT PLAN

BORING AND
MONITORING WELL LOCATIONS
12310 Slauson Avenue
Santa Fe Springs, California
For Catellus Development Company

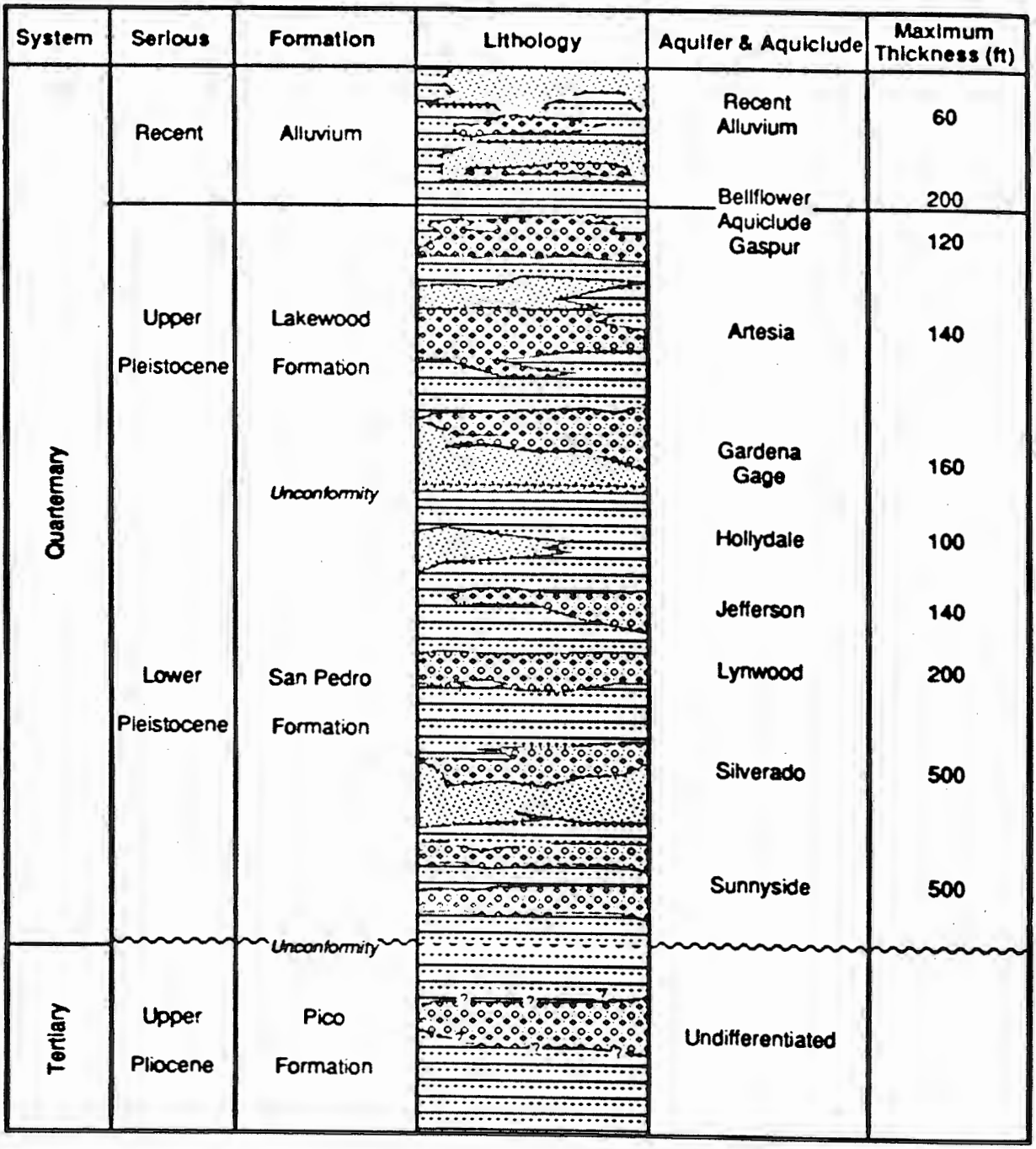
N

0 50 100
Approximate Scale in Feet

EXPLANATION

- B-3 — Dames & Moore Boring Location and Designation
- A-4 — Dames & Moore Angle Boring Location and Designation
- MW-6 — Dames & Moore Monitoring Well Location and Designation

Dames & Moore
FIGURE 6

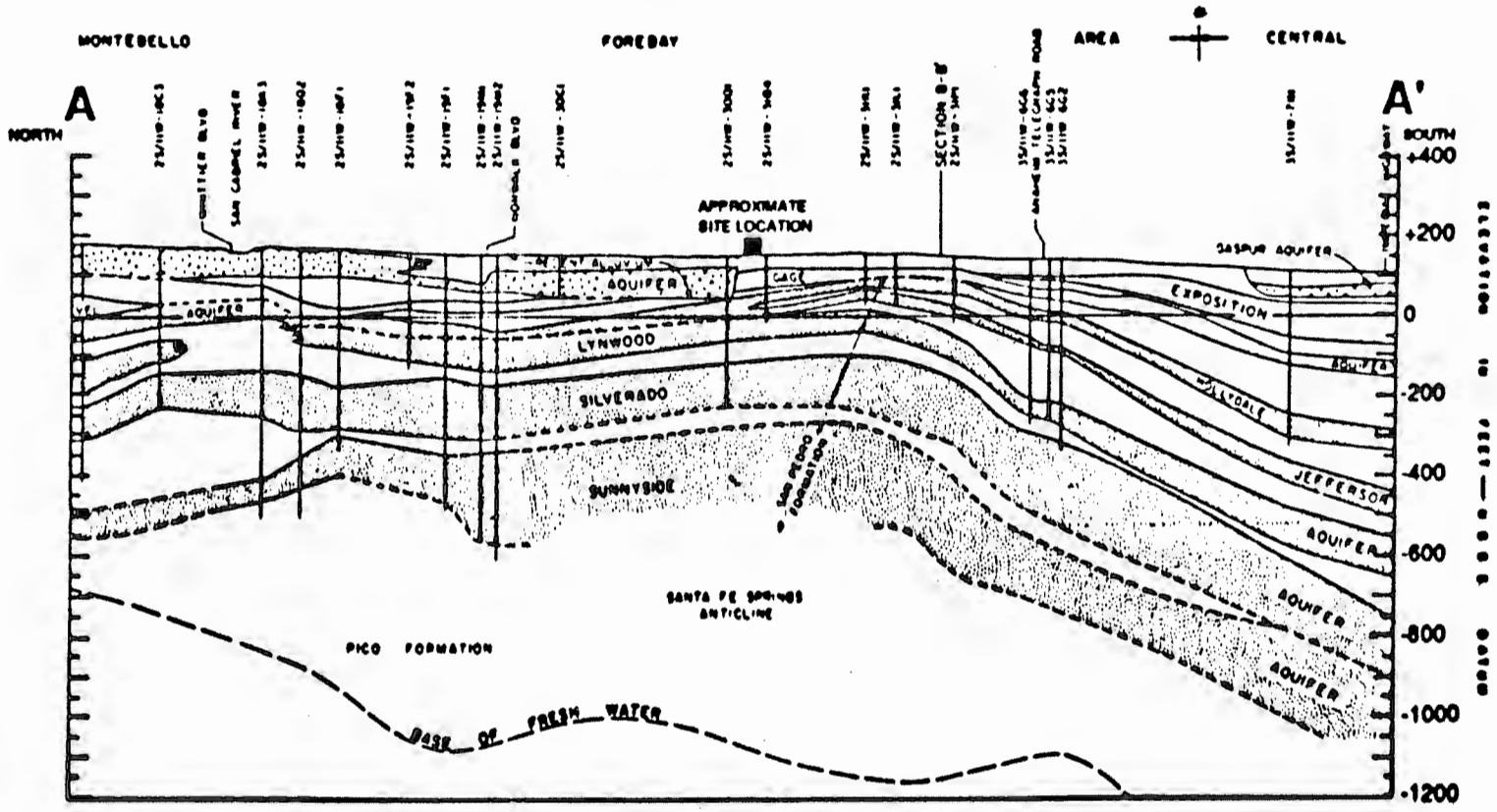


GENERALIZED STRATIGRAPHIC COLUMN

SANTA FE SPRINGS PLAIN

MODIFIED FROM CDWR, 1961

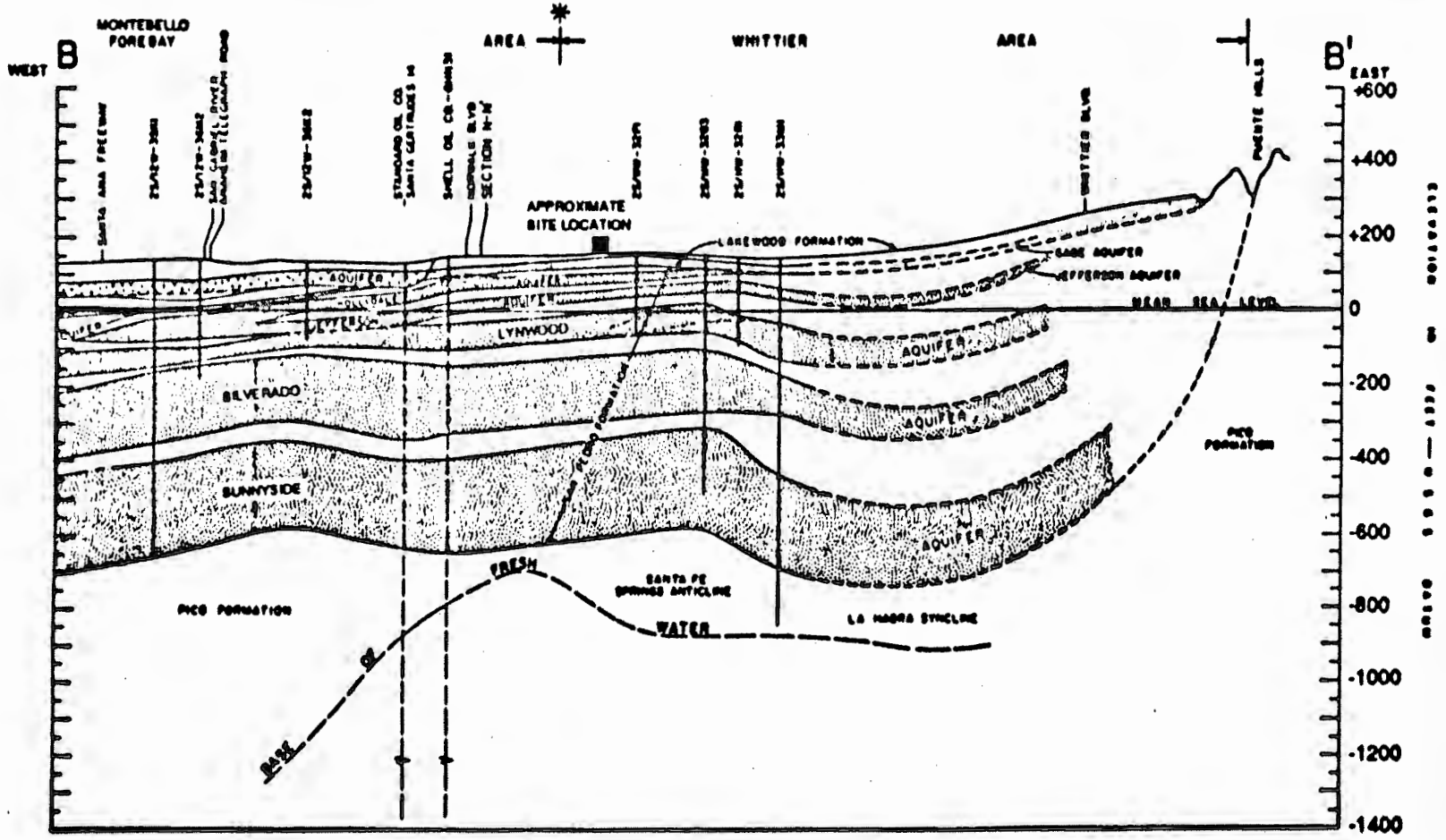
Dames & Moore
FIGURE 7



GENERALIZED CROSS-SECTION OF AQUIFERS IN SANTA FE SPRINGS AREA

For Catellus Development Corporation

Dames & Moore
FIGURE 8

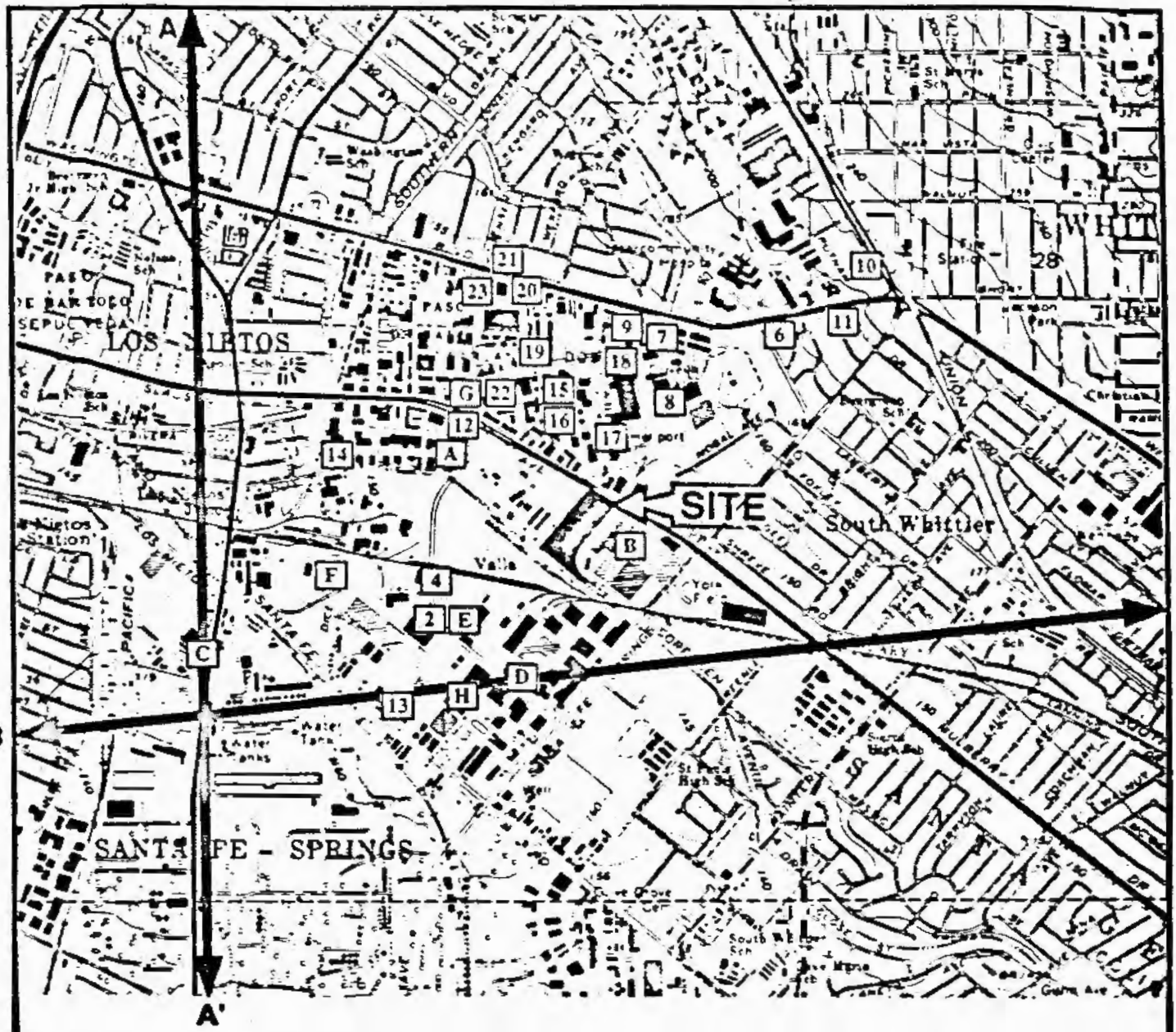


GENERALIZED CROSS-SECTION OF AQUIFERS IN SANTA FE SPRINGS AREA

For Catellus Development Corporation

Dames & Moore
FIGURE 9

FX-9: Wells



PROPERTIES INDENTIFIED AS KNOWN AND/OR POTENTIAL SOURCES

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California

For Catellus Development Corporation

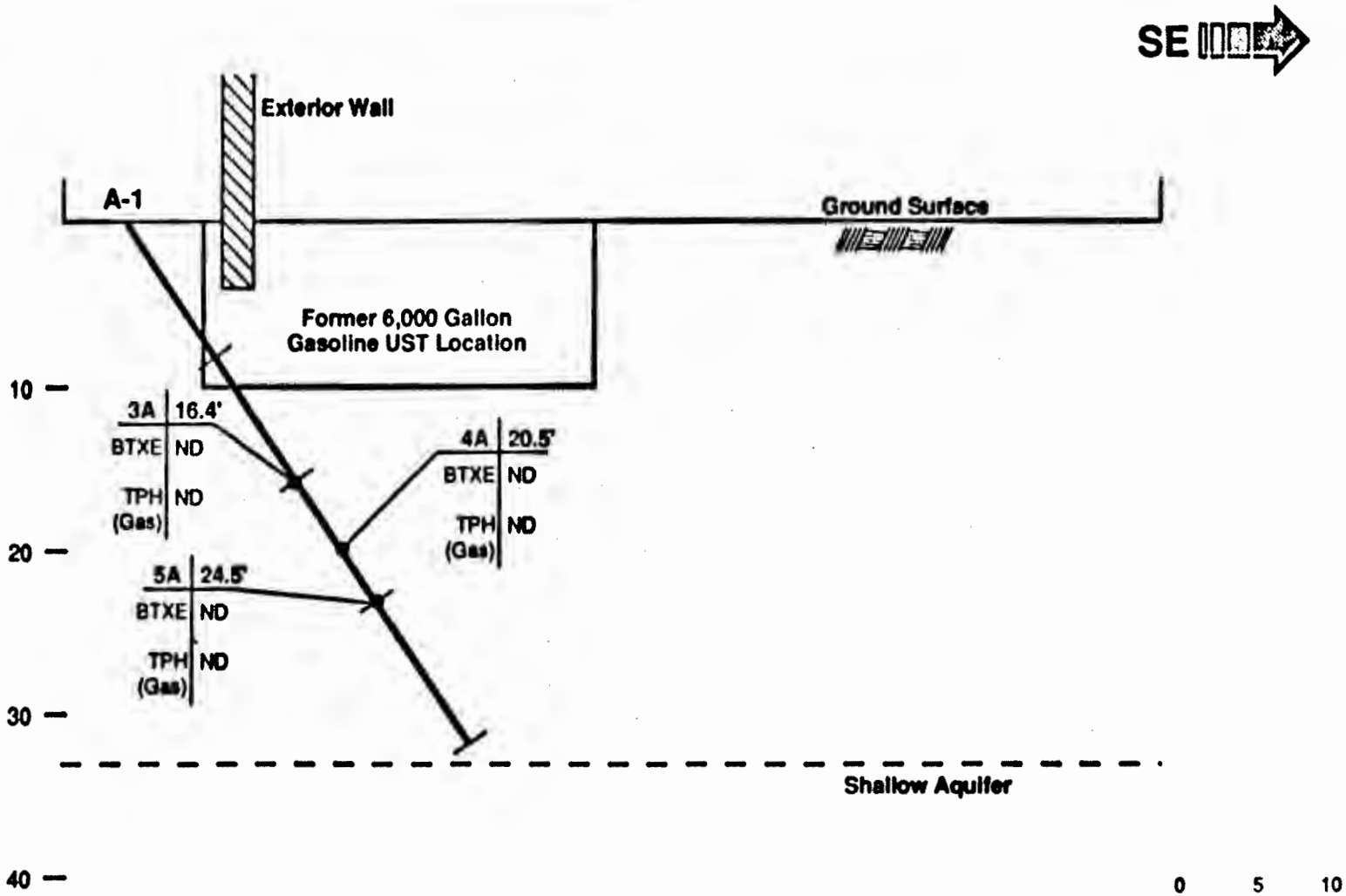
[A] Location of Known Sources

[2] Location of Potential Sources

CROSS-SECTION LINES EXTEND OFF THE MAP

REFERENCE: USGS 7.5 Minute Series Topographic Map, " Whittier, California" Quadrangle, Photorevised 1981

Dames & Moore
FIGURE 11



0 5 10

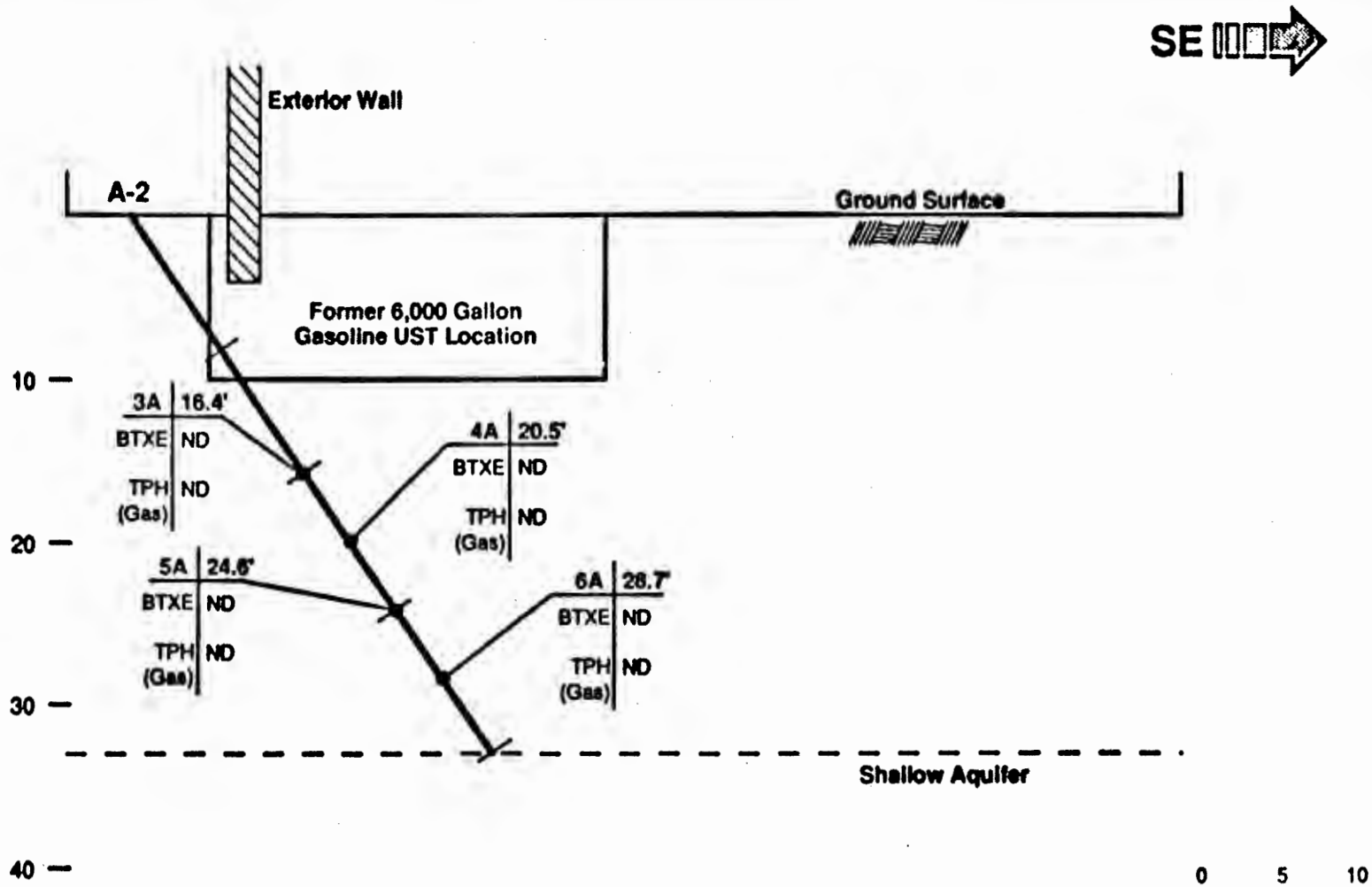
Approximate
Scale in Feet

* Depth of Samples Given Below
Ground Surface

CROSS-SECTION
Angle Boring A-1

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California
For Catellus Development Corporation

Dames & Moore
FIGURE 12



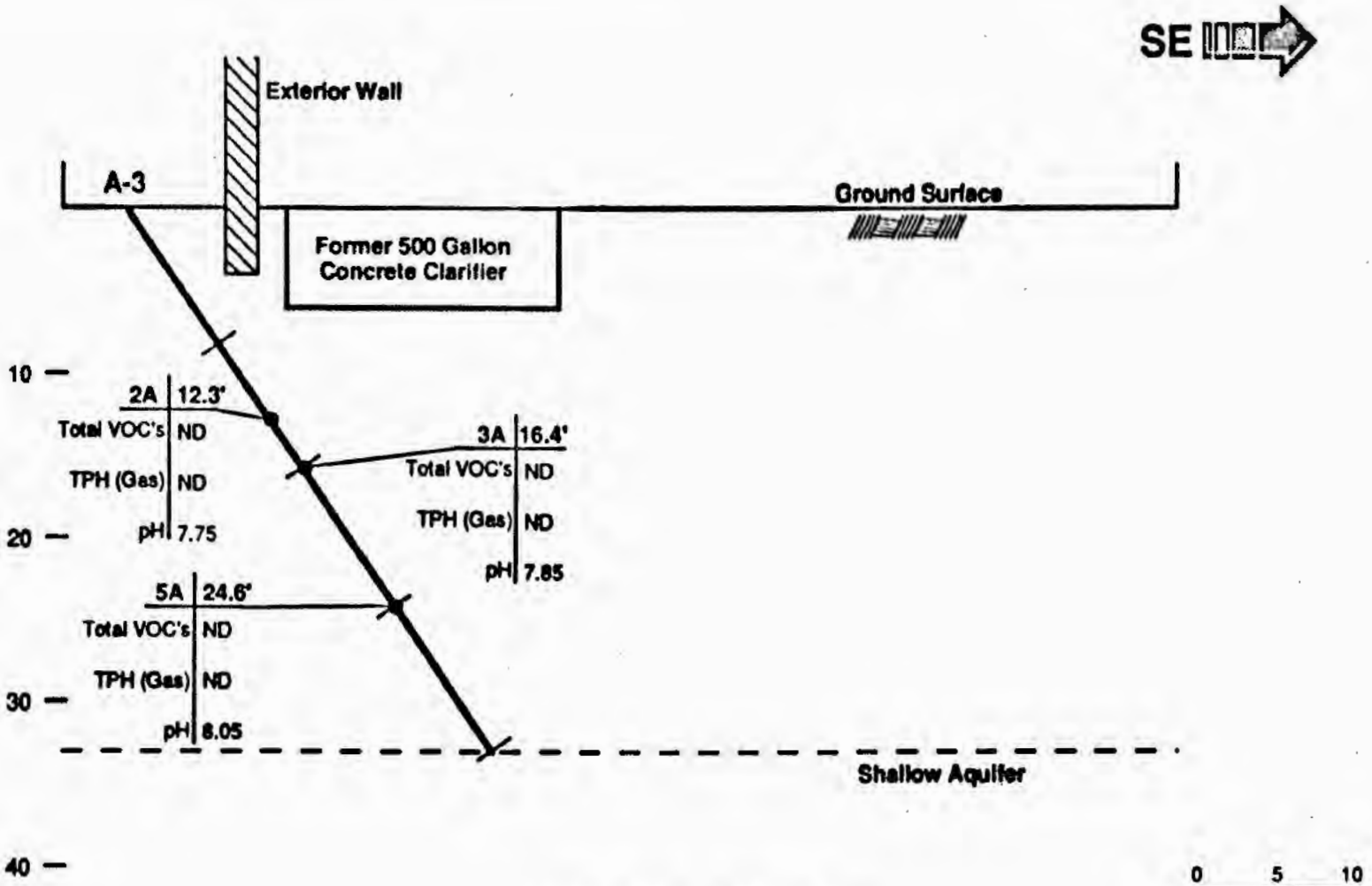
0 5 10
Approximate
Scale in Feet

* Depth of Samples Given Below Ground Surface

CROSS-SECTION
Angle Boring A-2

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California
For Catellus Development Corporation

Dames & Moore
FIGURE 13

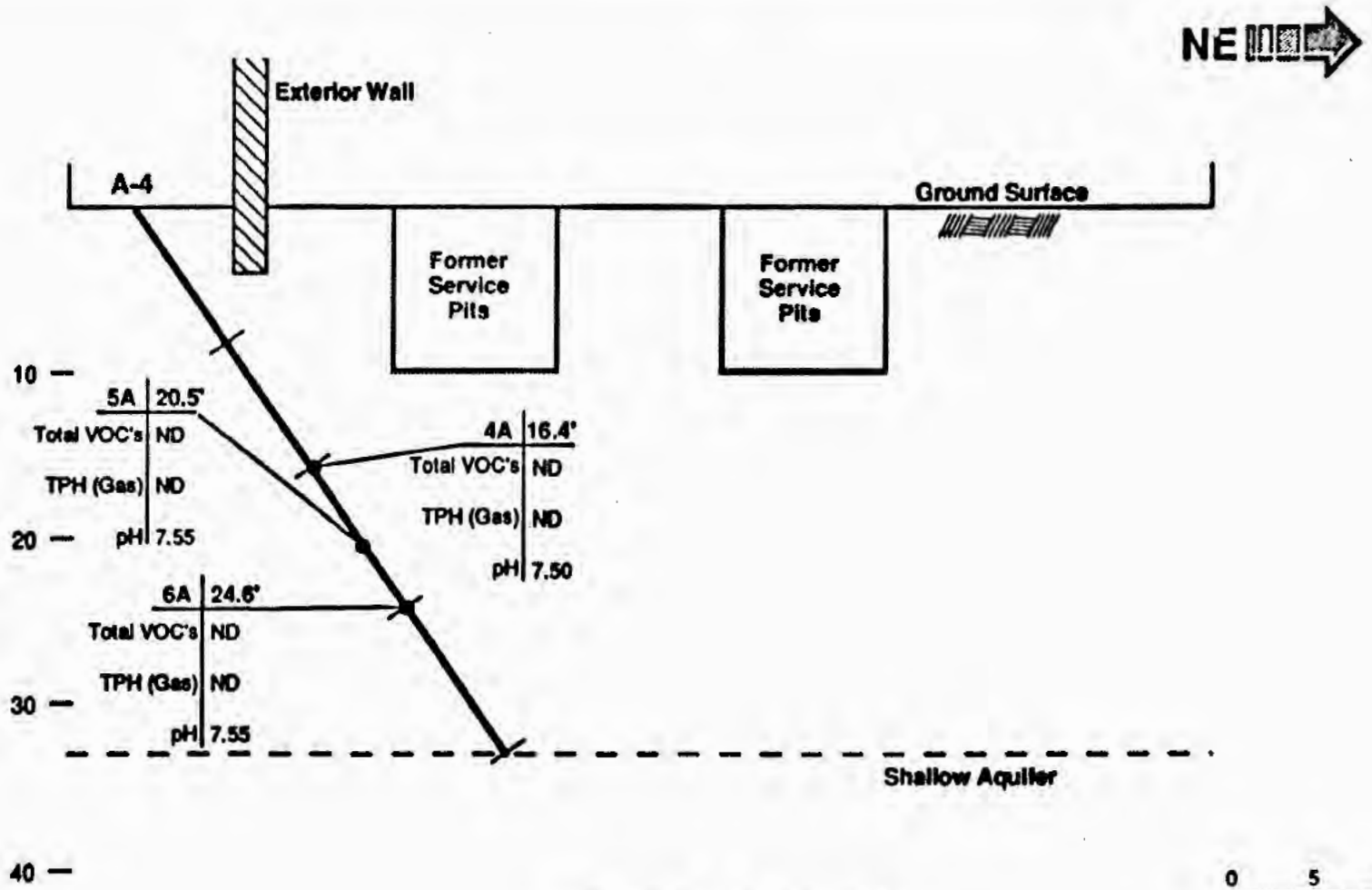


CROSS-SECTION
Angle Boring A-3

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California
For Catellus Development Corporation

* Depth of Samples Given Below Ground Surface

Dames & Moore
FIGURE 14



CROSS-SECTION
Angle Boring A-4

LA SALLE PARCEL
12310 SLAUSON AVE.
Santa Fe Springs, California
For Catellus Development Corporation

* Depth of Samples Given Below Ground Surface

Dames & Moore
FIGURE 15

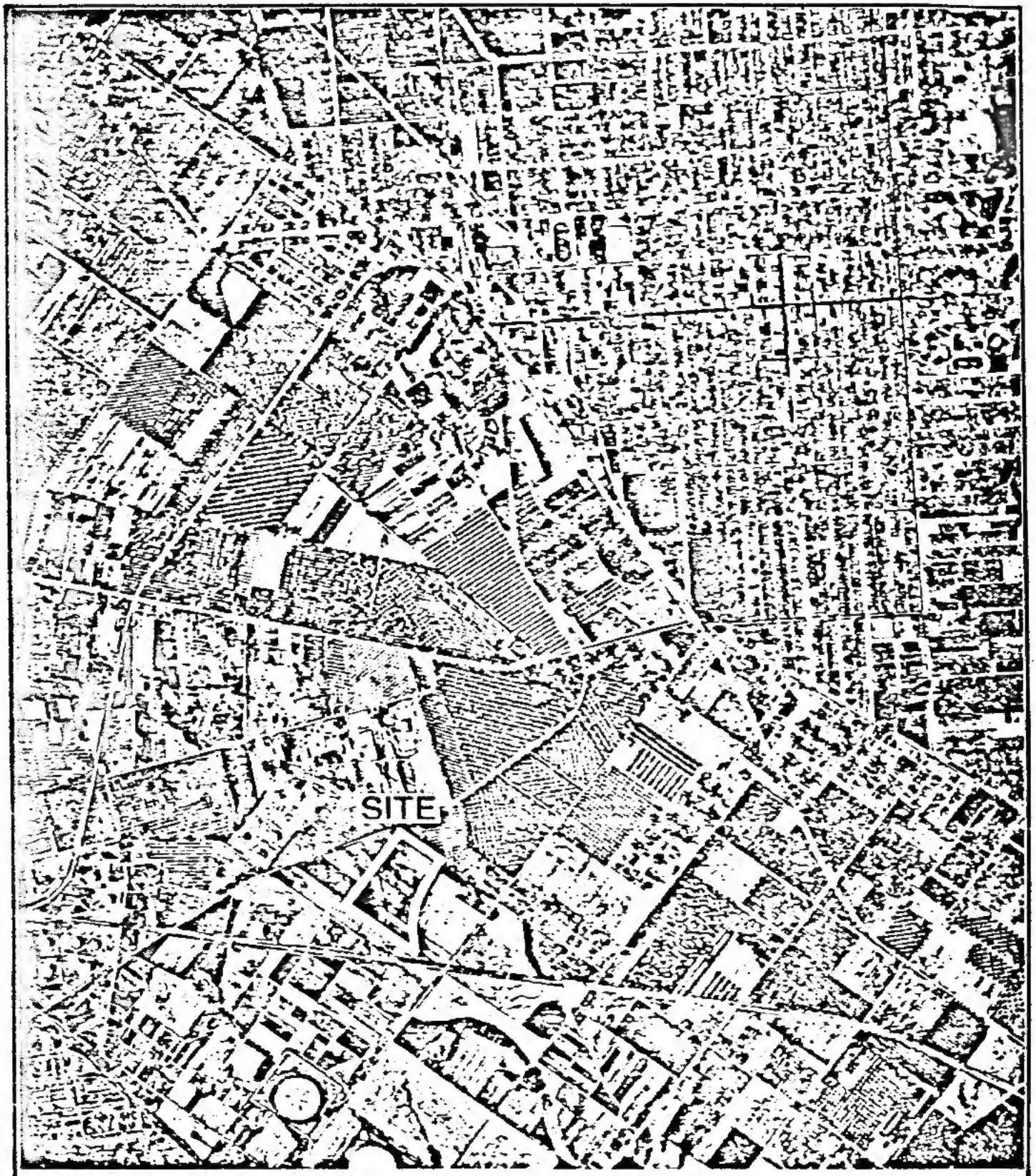
APPENDIX A

HISTORIC AERIAL PHOTOS

HISTORIC
AERIAL PHOTOGRAPH
1928

For Cate'lus Development Corporation

Dames & Moore
FIGURE A-1



HISTORIC
AERIAL PHOTOGRAPH
1936

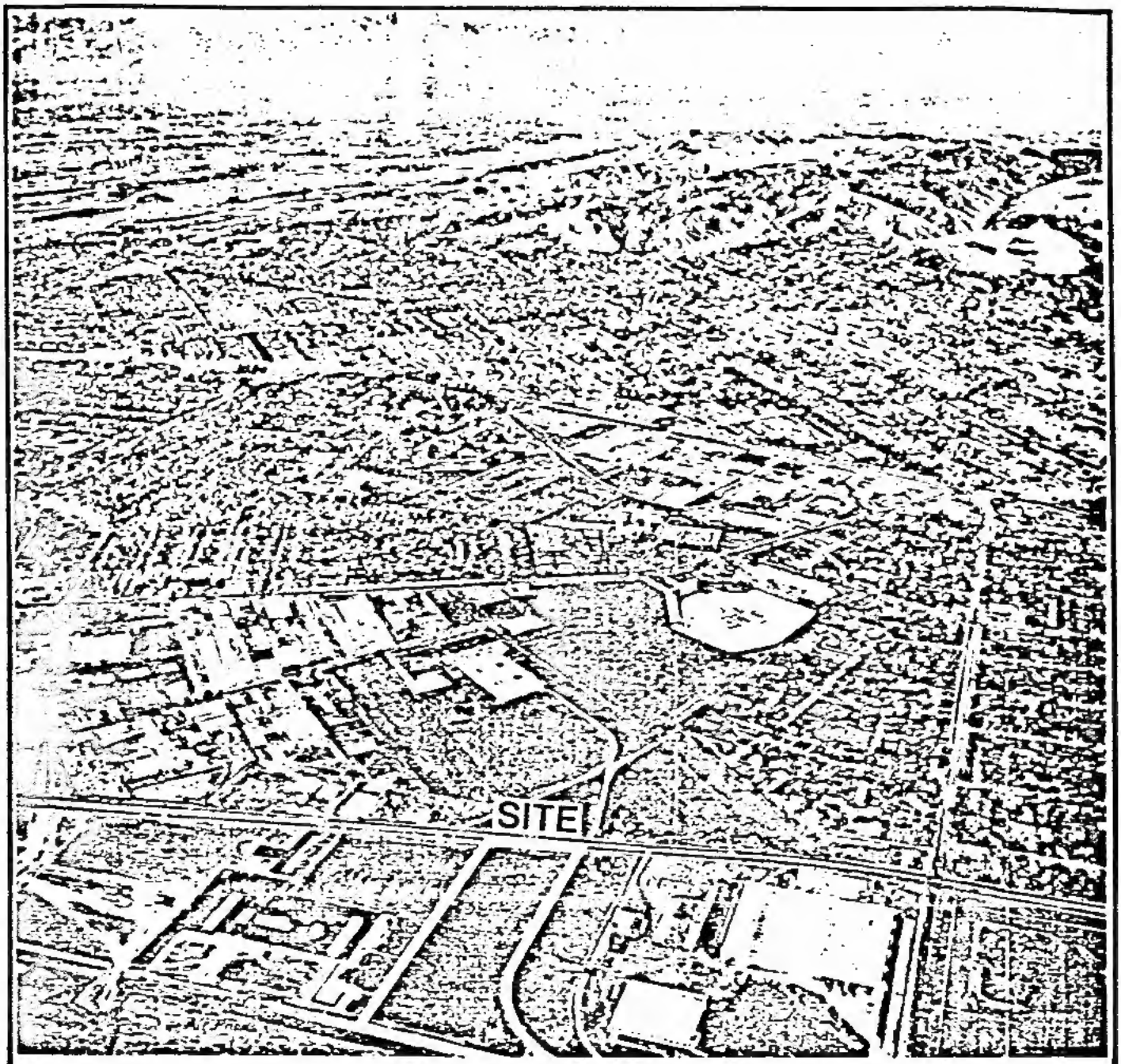
For Catellus Development Corporation

Dames & Moore
FIGURE A-2

HISTORIC
AERIAL PHOTOGRAPH
1945

For Catellus Development Corporation

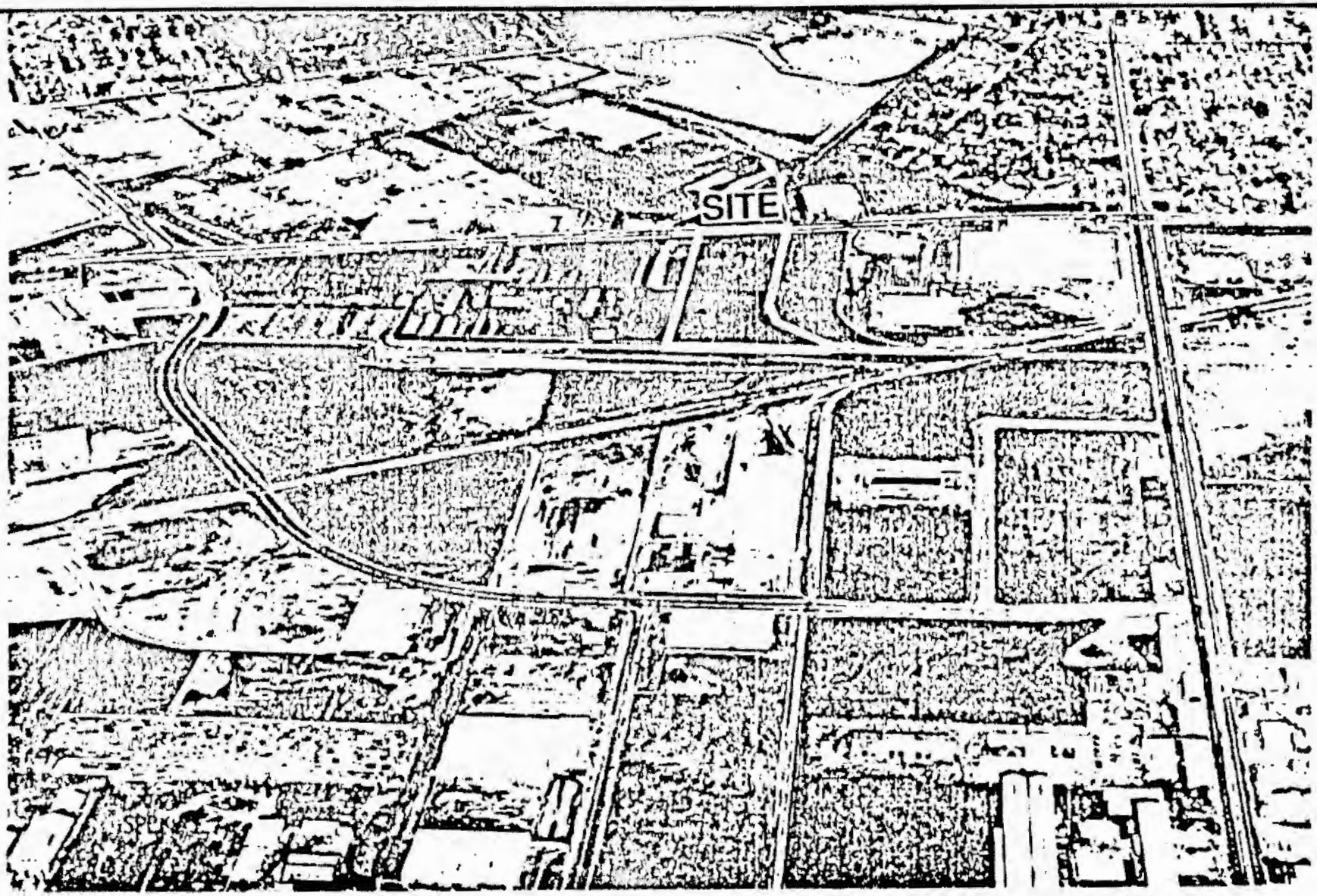
Dames & Moore
FIGURE A-3



HISTORIC
AERIAL PHOTOGRAPH
1963

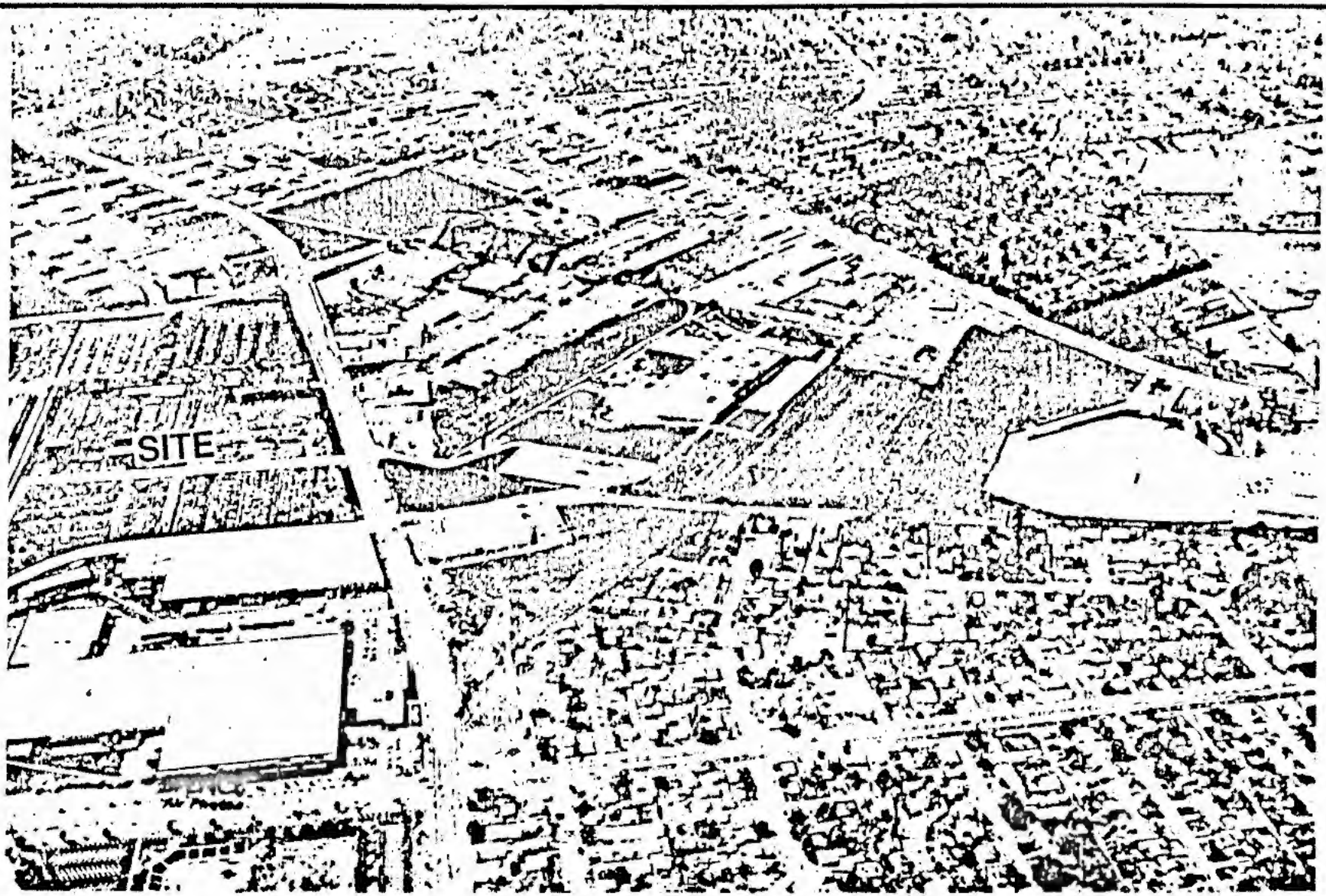
For Catellus Development Corporation

Barnes & Moore
FIGURE A-4



HISTORIC
AERIAL PHOTOGRAPH
1966
For Catellus Development Corporation

Dames & Moore
FIGURE A-5



HISTORIC
AERIAL PHOTOGRAPH
1969
For Catellus Development Corporation

Dames & Moore
FIGURE A-6